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THE STORY OF THE ENGINEERS

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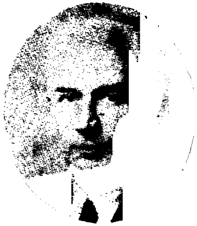

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THE STORY OF THE ENGINEERS

1800 - 1945

JAMES B. JEFFERYS
B.Sc. (Economics) Ph. D.

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FOREWORD

The Engineers have a history of which they have reason to be proud. It is in part a story of the development of tools and technique in man's age-long struggle to gain mastery over nature, in which struggle the achievements of the British engineer have won for him a lasting reputation in all parts of the globe. It is in part a story of the combination and organisation of workers to gain for themselves and their children the full fruits of their labour and skill. The tenacity and courage shown by generations of British engineers to achieve this end have secured for them a high place in the world trade union movement.

Most engineers have heard fragments of this story from their fathers and workmates or have read parts of it in schoolbooks, pamphlets and newspapers. But the connected story of the development of the tools and the development of the trade union movement in the industry has not been told.

On July 1st, 1945, the Amalgamated Engineering Union celebrated its twenty-fifth anniversary. We felt that no more fitting way could be found to mark this occasion than to fill this gap by the publication of a history of our Union.

We entrusted this task to James B. Jefferys, who is a qualified historian, and has personal experience of the Union and the industry. In spite of war-time difficulties of evacuated libraries and the destruction of irreplaceable documents he has written a book which provides for the first time a coherent picture of the struggles of the engineers and the part which they have played in British industry and in the working-class movement during the past 150 years.

But history is more than a record in which one can take pride, more than a collection of dates, facts, anecdotes and photographs. The past has a lesson for all those concerned with the future. For this reason the history is more than a souvenir: it is a serious attempt to trace and analyse the origins and development of the industry in which we work, and of the Trade Union of which we are members. We hope it will be read and studied by all Trade Unionists and students of political, social and industrial movements, whether they be engineers or not, who are concerned to leave—in the words of the Preface to the Rules of the Amalgamated Society of Engineers of 1851—"to a future generation not only a trade, but the means of maintaining its best interests, until some more general principle of co-operation shall be acknowledged in society, guaranteeing to every man the full enjoyment of the produce of his labour."

AUTHOR'S PREFACE

A statistical view of the history of trade unionism among engineering workers reveals a picture of growth, with few setbacks, from the handful of millwrights who organised in their local clubs at the end of the eighteenth century to the national Amalgamated Engineering Union and some forty smaller unions with a combined membership of over a million and a quarter in 1945. Impressive as this trend and such figures are, by themselves they could merely indicate the growth of the industry and the need felt by its workers for some form of organisation.

Behind the figures lies a story of human courage and sacrifice, of successes and failures, of correct decisions and mistakes; a story of men, and later women, combining together, building, developing and changing their organisation, sinking their individual differences and proving the falsity of such commonplace philosophies as "you cannot trust the other fellow"; a story of workers who, in spite of imprisonment or threats of imprisonment, of ever-present unemployment and poverty, of misrepresentations and slanders, defended and improved, by strikes and negotiation, by industrial and political action, their own standards and conditions and those of their families.

Moreover, the story of the struggles of the engineering workers, of their varying methods and policies and of their leading personalities can only be told against the background of a changing Britain and a changing industry. Every trade union, in no matter what industry, reflects in its policy and structure the social, political and industrial conditions of the time. In addition, each union reflects the technological state of its own particular industry. In the engineering industry the technical changes in the past one hundred and fifty years were both more frequent and more profound than in many other industries and their influence on the methods, scope and policy of the engineering trade unions as a consequence was most marked.

For this reason an outline has been given of the changes in the organisation and technique of the industry, and in the living and working conditions of the engineers, alongside the history of the unions. The complete story of the engineers therefore is not only one of numerical growth, nor only of strikes, lock-outs and negotiations and the aims and hopes of the workers who took part in them. It is also a story of the engineers struggling to adjust their policies and organisation, sometimes successfully, sometimes unsuccessfully to a changing social and political background and a rapidly changing industry.

In the presentation of this history, the developments in the technique, products and structure of the industry and in the living and working conditions of the engineers have been described and analysed apart, in the form of introductions to each part of the story of the trade union movement itself. This separation and the division of the book into four parts has been made for the purpose of simplification only and enables the reader, if he or she wishes, to read the story of the Union as a continuous whole by omitting the introductions, but for a full understanding of the story, the backgrounds are essential.

My thanks are due to the Union Research Department for unfailing courtesy and assistance at every stage of the book, and to the many members who have sent material and have made suggestions; to Dona Torr for encouragement and advice on reading the manuscript; to many friends who have helped in the research and particularly to Nancie Berger and my wife, without whose assistance the book could not have been written.

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PART ONE : 1800-1852

THE BIRTH OF THE INDUSTRY AND THE FIRST TRADE UNIONS AMONG ENGINEERS

CHAPTER I

The Millwrights, the New Tools and the First Amalgamation: 1800-1851

The antiquity of the engineering trade is indicated by the Biblical reference to the foreman or chargehand Tubal Cain, "an instructor of every artificer in brass and iron"[1], by the existence of millwrights in Saxon times and by the emergence as early as the sixteenth century of a professional class of military engineers, but it was not until the end of the eighteenth and beginning of the nineteenth centuries, the period of the Industrial Revolution, that the engineering industry proper and trade union organisation among its workers began to develop.

There were two phases of the Industrial Revolution which ushered in the wealth and poverty of modern capitalism. The first period saw the invention of new methods and processes directly applicable to the industrial and commercial economy of the country and the further development of existing processes. The second period saw the interaction of these new methods in different trades upon other dependent and associated trades, and the widening use of the new methods in the main industries of the country. Two phases are also to be seen in the development of the engineering industry. It had to provide and develop the skill and experience to enable the new machines and equipment to be constructed, and subsequently it underwent a reorganisation to enable these steam engines, tools, textile machines, bridges and pumps to be produced in numbers and quality sufficient to meet the widening demand and use. These phases resulted in two different types of organisation among engineers, differing not only in the class of worker taking part, but also in the scope, aims and methods of organisation.

It was to the millwrights, blacksmiths, carpenters and masons that the inventors and capitalists of the late eighteenth century turned for assistance in developing the new machines and new methods. Engineers, either civil or mechanical, did not exist, but the millwright stood out above other craftsmen as the closest approximation to both.

Sir William Fairbairn, a leading civil engineer and himself apprenticed as a millwright, wrote in 1861:

> "The millwright of former days was to a great extent the sole representative of mechanical art . . . he was an itinerant engineer and mechanic of high reputation. He could handle the axe, the hammer and the plane with equal skill and precision; he could turn, bore or forge with the despatch of one brought up to these trades and he could set out and cut furrows of a millstone with an accuracy equal or superior to that of the miller himself . . . Generally he was a fair mathematician, knew something of geometry, levelling and mensuration, and in some cases possessed a very competent knowledge of practical mathematics. He could calculate the velocities, strength and power of machines, could draw in plan and

> section, and could construct buildings, conduits, or water courses in all forms and under all conditions required in his professional practice. He could build bridges, cut canals and perform a variety of work now done by civil engineers."[2]

The construction, on the one hand, of roads, harbours and bridges to ensure rapid and cheap transport for the raw materials and the finished product, and of steam engines, pumps, tools and machines, on the other, made calls for skill and ingenuity and these millwrights, ably aided by smiths and carpenters answered the call.

With their experience of elementary flour mills, water wheels and windmill construction, they helped the design, made the patterns, cast the iron, produced the plane surfaces with hammer, chisel and file, the cylindrical surfaces and bores with hand-tools in hand or foot-driven lathes, and constructed the wooden frames to make the machines, the engines, bridges and equipment which were to change the face of Britain.

The high degree of skill required, its scarcity, and the absence of direct precedent in the work done raised the wages question sharply. In most industries wages and conditions were theoretically still governed by the Justices of the Peace under the Elizabethan Statutes of Labour, but in practice, though sporadic attempts were made to invoke their authority or widen their scope, now by journeymen, now by masters, the statutes were falling into disuse.

For the millwrights who were organised in Clubs on a Friendly Society basis for convivial company of men in the same trade and for mutual assistance in times of sickness and death, a trade problem on which common discussion and action was needed was developing. The itinerant and often individual character of their work and terms of employment militated against a widespread organisation, but where engine- or bridge-building was on a scale which led to regular employment in one locality, a "trade policy" emerged alongside the provision of benefits. The policy adopted was one of direct collective bargaining with the employers rather than petitions to Parliament for inclusion in the Elizabethan Statutes and the regulation of wages by Justices. The failure of the journeymen of other trades who tried these traditional methods to achieve their aims did not encourage imitation[3] and it was left to the master millwrights to adopt this policy.

By 1799 the organisation among their workmen had become so strong that the master millwrights of London combined and by a Petition sought Parliament's sanction for the fixing of wages in the trade by Justices of the Peace and for the suppression of this combination among journeymen millwrights. They claimed that this combination had existed for some time . . . .

> "within the Metropolis and Limits of Twenty-five Miles round the same for enforcing a general increase of their wages, preventing the Employment of such journeymen as refuse to join in their Confederacy, and for other illegal Purposes . . . and that in Support of the said Combination (notwithstanding they complain of Insufficiency of their Wages) the Journeymen have established a

> general Fund and raised Subscriptions and so regular and connected is their System that their Demands are made sometimes by all Journeymen within the above Limits at the same Time, and at other Times at some particular Shop and in case of Non-Compliance, the different workshops (where these Demands are resisted) are wholly deserted by the Men and other Journeymen are prohibited from applying for work until the Master Millwrights are brought to Compliance."[4]

Neither the name nor the number of members of this "Confederacy" are known with certainty (it was probably the "London Fellowship of Millwrights"), but it is evident that after allowing for the Masters' natural exaggeration the elements of an effective trade union were present.

The charge against the Millwrights of a "dangerous combination" was not an isolated attack on one section of the working class. It was, in fact, the culmination of a series of petitions and moves by the "new" industrial masters and the landed ruling class whose aim was to avoid the inevitable consequences of the growing industrialism—revolt by the dispossessed groups of the workers and combination by the workers brought together in workshops and factories—and to prevent the spread and ripening of the ideas and actions of revolutionary France with whom Britain was at war.

Legally both these ends were attained. The Bill drawn up to satisfy the Master Millwrights was withdrawn and a more comprehensive Bill including all trades was suggested by William Wilberforce, introduced by Pitt and rapidly received assent. This Act and the more stringent amending Act passed in the following year, known as the Combination Acts, prohibited all forms of trade unions. The Corresponding Societies Act of 1799 likewise made illegal political organisations taking the form of Corresponding Societies which then seemed to threaten the existing order.

The spirit and ferocity of the attack on working-class organisations is well illustrated by the remarks of Sir John Sylvester—known as Bloody Black Jack—sentencing London compositors to imprisonment in 1810 for belonging to a combination.

> "Prisoners, you have been convicted of a most wicked conspiracy to injure the most vital interests of those very employers who gave you bread, with intent to impede and injure them in their business; and indeed as far as in you lay to effect their ruin. The frequency of such crimes among men of your class of life and their mischievous and dangerous tendency to ruin the fortunes of those employers which a principle of gratitude and self-interest should induce you to support, demand of the law a severe example should be made of those persons who shall be convicted of such daring and flagitious combinations in defiance of public justice and in violation of public order. No symptom of contrition on your part has appeared—no abatement of the combination in which you are accomplices has yet resulted from the example of your conviction."[5]

The repression, however, proceeded unevenly and though the character of their Clubs may have been more that of a friendly society than of a trade union, the millwrights continued to organise. In 1810, for example, when William Fairbairn applied for a job in London he was told by the foreman of "almighty Rennie"—the builder of Waterloo Bridge—that he must join a Millwrights' Society before he could start as it was "no ticket, no job." Fairbairn's indentures were not in order, the Society refused to admit him and he had to leave London. Later, however, he was admitted by another Society and in all there were three separate Millwrights' Societies in existence in London.[6] These organisations were strong enough to lay down hours of work—6 a.m. to 6 p.m. in summer, and light to dark in winter—and to secure in most shops fixed wages of 7 shillings per day.[7] The general opinion among the masters as to the effect of the Combination Acts in engineering was that "it has had no effect at all among engineers and millwrights in restraining combinations."[8] The employers themselves had also found it necessary to combine and in 1805 John Hall, Penn, Donkin and other masters formed a Master Millwrights' Society.[9]

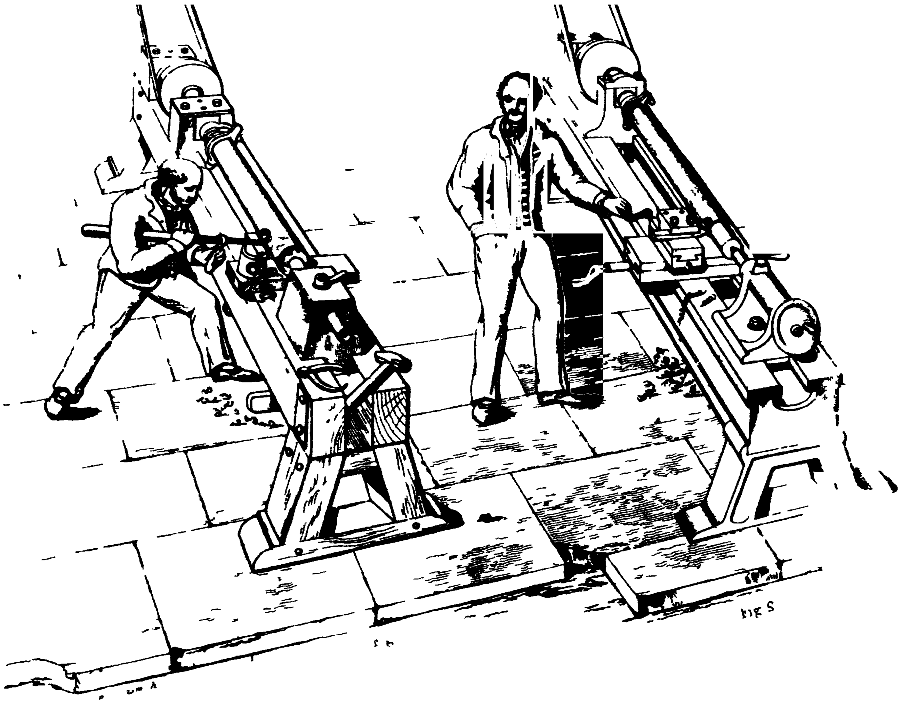
But while the threats and repressions of the masters, the Pitts and the Sylvesters failed to break the Millwrights they remained only local organisations of a highly exclusive character. Even in these years, when they were sufficiently powerful to make high-handed employers like Galloway and Bramah pay a standard rate of wages and could send a future Sir William Fairbairn tramping, changes were taking place in the trade which were to end both the local and the highly exclusive character of the engineers' trade unions and to deal a blow at the trade of millwrighting itself.[10]

The Revolution in the Tools

The success of the steam engine and machines, particularly in textiles, and their development for other spheres of industry was creating a demand for them in quantity and quality which the handicraft methods of the millwrights, ingenious and remarkable as they were, were completely unable to meet. The embryonic state of the engineering industry with the high cost of production, slow methods, small quantities, and lack of reliability and power of the machines, was becoming the bottleneck of the Industrial Revolution. In the words of a contemporary:

> "The only obstacle . . . consisted in our almost entire dependence upon manual dexterity for the formation and production of such machines as were required . . . and a sudden demand for machinery of unwonted accuracy arose which the stock of workmen then existing were neither adequate in respect to number or ability to meet."[11]

To end this bottleneck a revolution in the basis of machine-making was necessary—a transformation from making machines by hand to making machines by machines. Between 1800 and 1840 a series of inventions and improvements were perfected, which paved the way for this transformation.



THE OLD AND THE NEW SKETCH BY JAMES NASMYTH ILLUSTRATING THE EFFECT OF THE INTRODUCTION OF THE SLIDE-REST PRINCIPLE

The lathe and the planer, the parents of all machine-tools, received their basic modern shape in these years. The lathe, though known and used for centuries was, until the end of the eighteenth century, constructed chiefly of wood, sometimes with iron bands and corners for strengthening, driven by hand labour or by a foot treadle, and the turning tool was held in the hand or under the arm on a rest against the job. Screwcutting by machine was practically unknown, the methods used being either an elementary die or twisting a strip of paper round the metal, marking the centre line of the paper with a punch and then slowly following the marks with a tool.

Limited as were the hand-lathe and borer for producing cylindrical surfaces, for producing plane surfaces no machine-tools of any sort were available. The casting from the foundry had to be laboriously chipped, dressed and filed by hand if a flat surface was required.

A number of men were working practically simultaneously on the problem of releasing the youthful engineering industry from this cage. John Wilkinson, Joseph Bramah, Henry Maudslay and his son, John Clements, Richard Roberts, Joseph Whitworth, Francis Fox, James Nasmyth and George Rennie, were a few of the men who changed the basis of the engineering industry in the same way as James Watt and others had changed the basis of harnessing power, and Crompton, Arkwright and Hargreaves the method of producing textiles.

It is to Henry Maudslay, the greatest of them all, that credit goes for the development of the slide-rest combined with a lead screw in an all-metal lathe. This lathe, built in 1800, marked the beginning of a new era in mechanical engineering. The iron bed and slides in place of wood or iron plates, gave rigidity and scope for heavier and larger work. The slide-rest, or "Maudslay's Go-cart" as it was called, gave speed, accuracy and uniformity and combined with gear wheels and the lead screw, gradually shifted turning and screw-cutting from the realms of ingenuity and individuality of pitch and size, to the realms of standardised production. In later years James Nasmyth, a pupil of Maudslay's, wrote of the slide-rest:

> "This beautiful and truly original contrivance became, in the hands of its inventor, the parent of a vast progeny of perfect screws, whose descendants, whether legitimate or not, are to be found in every workshop throughout the world where first-class machinery is constructed."[12]

Clements and Roberts developed similar methods and improved on Maudslay's, and Whitworth improved not only the structure of the lathe but also, with the system that now bears his name, took steps to remove the slur of illegitimacy and to lay down standards for the screw produced.

The planer, described by Nasmyth as "the immediate descendant of the slide-rest,"[13] as it embodied the same principle of the rigid tool in a holder moving laterally on a screw, was the product of many minds. Between 1815 and 1840, Roberts, Clements, Rennie, Matthew Murray, Fox, Whitworth and Nasmyth all developed or improved the planer. This machine was directly complementary to the slide lathe. It enabled beds and slides to be made which matched in accuracy the lead screws and the gears of the lathe. and together they laid the basis of the modern engineering industry.

Other machine-tools, by-products of the lathe and the planer, were now possible. The shaper, slotter, borer and self-acting drill, each of which had been in existence in rudimentary form for machining wood—for example, the morticer was the forerunner of the slotter—were now copied and improved for metals. A wheel cutter and Nasmyth's steam hammer of 1838 which affected wide changes in the uses of wrought iron, were two other important machines developed in these years.

To drive the machines the engine replaced the man or in some cases the woman. For example, in 1816, Richard Roberts did mechanical work and "screw-cutting on reasonable terms" at his home in Water Street, Manchester. His lathe was in the bedroom with the belt passing through the living room to the cellar where the flywheel was turned by his first wife.[14] When William Fairbairn set up business in Manchester in 1817 he employed a John Murphy to turn his lathe and with the expansion of business three assistants were helping Murphy four years later. But in 1823 the more powerful though not necessarily more reliable steam engine was installed in the place of the "muscular Irishman." [15]

Hand-tools did not see such a marked change, the file and chisel remaining much as they had been for centuries but other tools, such as taps and dies, developed slowly from a one-job tool to a standard and repeating tool.

To match the improvement in tools came improvement in measurement. Joseph Whitworth's paper before the British Association in 1840 on "The Mode of Producing a True Plane," and the experiments that led up to it, marked as big a step in measurement as Maudslay's slide-rest had marked in machining. Previous methods of producing a true plane, essential to all measurement, were by scraping one surface flat or at best working two with file, emery and scraper until they clung when placed on top of each other. Whitworth showed that this did not allow for one surface being convex and the other concave and that the only method was by treating three planes until they clung together no matter in which order they were placed. This effected the first stage in promoting measurement from an art, entirely dependent on the workman's sight, to a science. Other methods of measurement were developed, such as the rudimentary and cumbersome micrometer by James Watt and an intricate "measuring machine" by Joseph Whitworth, but their use was very limited and calipers and the foot rule with a "fine 32nd" held the field as the most accurate general measurement.

Parallel with and an essential part of this revolution in the making of tools, was a great expansion in the iron trade. Cast iron became available in sufficient quantities and at a price which enabled the machines, shafts, pulleys and gears to emerge from the limitations of wood.

These developments led to far-reaching changes in the economy of the engineering industry and in the customary methods of working. The practice of the machine-maker carrying his tools, sometimes including a lathe, drill and grindstone, from mill to mill to build the machinery on the spot or being directly employed by the mill owner, gave place to textile machine-making factories in and around the textile areas. Nor was a backroom workshop sufficient. James Nasmyth's first workshop in Dale Street, Manchester, was over that of a manufacturer of cut-glass tumblers and decanters. The plaster from the ceiling which fell among the glass whenever Nasmyth's lathe was turning caused much concern to the downstairs tenant and when the beam of a 20 h.p. steam engine, which had come to Nasmyth for repair, crashed through the floor, he demanded that the engineer should remove to a larger and stronger workshop. The large Nasmyth factory at Patricroft resulted from this move. The experience of Messrs. Kitson, of Hunslet, Leeds, who built their first locomotive in a small shop and then had to knock down the side of the building to get it out,[17] made other manufacturers in this growing section of the industry aim at adequate floor space from the start.

Differentiation in the workers' trades began to appear. Division of labour into pattern-makers, iron- and brass-founders, smiths, hammermen and firemen, vice-men and filers (as the fitters were called), turners and planers, developed of necessity in a fair-sized establishment in the place of millwrights, carpenters and blacksmiths.

These new tools and methods spread slowly, partly because the capital outlay was so heavy. In 1841 a maker of textile machinery stated that "where we had £50 expended on tools in 1825 we have £1000 expended now."[18] Consequently there was a wide gap between the Maudslays and the Whitworths on the one hand and the small jobbing shops on the other. But as the new methods were introduced more extensively not only the tools, but the industry itself underwent a transformation. In the words of the President of the Institute of Civil Engineers :

> " . . . the rapid introduction of cast iron together with the invention of new machines and new processes called for more workmen than the millwright class could supply . . . a new class of workmen was found and manufacturing establishments arose to which were attached iron and brass foundries with tools and machines for constructing machinery of every description."[19]

The engineering industry was emerging from the chrysalis stage and with it the organisation of the engineers.

The New Class of Men and their Societies

The "revolution wrought in machine making by tools"[20] and the repeal in 1813-14 of the Elizabethan Statute of Apprentices which had limited entry into most skilled trades, either as workman or master, to those who had served an indentured apprenticeship, was hailed by some employers as heralding their emancipation from dependence on skilled millwrights and the end of effective combination among engineering workers. Alexander Galloway, a London employer, *towns, and the total inadequacy both in spirit and structure of Govern*mental attempts to handle industrial distress through the Elizabethan Poor Law and the subsequent Act of 1834, forced the workers to take action themselves. The action taken however had unity in neither object nor method. In the early 'thirties some sections of the working class supported John Doherty's National Association for the Protection of Labour, others agitated for the passage of the Reform Bill. Cheated by the Act, there was support for the Grand National Consolidated Trades Union and Robert Owen's Co-operatives, and at the close of the decade enthusiasm for the political demands of the Chartist movement. All these great popular movements included in their ranks both those who were looking back to the "good old days" before machines, and those who were looking forward to using these machines for the good of all.

The engineers played a negligible part in these great movements[26] for they were sectional in their outlook and policy. Their organisations were growing in strength but division and rivalry was the keynote rather than the unity of one trade and of all trades, the ideal of the Grand National Consolidated Trades Union. On policy there was greater agreement among the engineers but this too led them away rather than towards these movements. They could scarcely sympathise with those who wanted to destroy machinery, nor were they to be easily converted to Owen's socialism or the political demands of the Chartists, when their trade was new, fluid and expanding and seemed to provide them with definite opportunities of rising to become employers. With their relatively high wages an alternative policy of saving through their clubs against bad times—an alternative denied those whose wages were totally insufficient to meet their current needs—offered the greatest hope of success.

However, with a somewhat delayed action, some of the ideas of the Grand National Consolidated Trade Union and Owen's Co-operative Movement had undoubted repercussions among the engineers. A second burst of trade union formation took place between 1833 and 1838, the most significant formations being "The London Friendly Society of Engineers and Machinists," 1833 ("The Old Engineers"), "The Society of Friendly Boilermakers" Manchester, 1834, and "The Amalgamated Society of Metal Planers," 1836. And in 1838, the first steps were taken towards reducing the number of conflicting and rival Societies in the industry. The amalgamation in that year of the Yorkshire Mechanics' Friendly Union Institution with the Friendly Union of Mechanics operating from Manchester to form the "Journeymen Steam Engine and Machine Makers' Friendly Society" marks the close of the first phase of trade union organisation among the "new class of workers."

The seventeen years from 1822 to 1838 which saw so many separate societies and clubs formed was a period of experiment in organisation under the unfavourable conditions of doubt as to the legality of trade unions, of economic fluctuations and of widespread confusion among the workers as to policies and methods to be adopted.

Few of these experiments were successful or long-lived and although new societies were aware of the existence of previous ones, even to the extent of copying some of the Preambles and Rules,[27] they tended to repeat rather than avoid their mistakes. Common to almost all these attempts was the policy of confining the organisation to the workers in one or two particular trades or branches of the industry in a particular locality rather than attempting to embrace all the engineers in the country as a whole. This was due partly to the uneven growth of the industry—for example the general engineers of London could not be identified with the textile-machine makers of Lancashire[28]—and partly to the successful exclusive tradition of the millwrights. In the later 'thirties it was becoming clear to the more far-sighted members of the various societies that this policy was mistaken.

Two other features of most of these experiments proved workable and were to be continued and adapted in altered circumstances; these were contributions for mutual aid in times of need, and the restriction of membership to those who had served an apprenticeship. It was inevitable that in those Societies which succeeded and grew in membership and influence, these features should develop into a trade policy although almost imperceptibly and not necessarily in a written and defined fashion. Grants to members on "travel" between one town and another in search of work, and donation benefit to out-of-work members led Societies paying these benefits to take a direct interest in the state of trade and methods of improving it.

The End of Experiments: The Journeymen Steam Engine and Machine Makers' and Millwrights' Friendly Society

Between 1838 and 1850 in sharp contrast to the previous seventeen years only one important new Society—the United Machine Workers' Association, founded in Manchester in January, 1844—was formed by engineering workers, though new ones appeared among kindred and specialised trades. Efforts to build trade unions were no longer frittered away in short-lived experiments, but were concentrated on building and strengthening those Societies which had been tested and found effective. Far and away the strongest of these was the Journeymen Steam Engine and Machine Makers' Friendly Society, known to all as the "Old Mechanics," which had nearly 3,000 members by 1838. Its nearest rival was the Steam Engine Makers' Society which although two years older had only 525 members in 14 branches in 1836.

The founder of the "Old Mechanics" on July 26, 1826, was John White who held the No. 1 membership card of the Manchester 1st branch. He campaigned enthusiastically in Manchester for the new Society, and on Saturday nights travelled to Stockport, Oldham and Bolton to advocate trade unionism, walking home on Sunday, but his task was far from easy. According to his son, he had to change his lodgings every three or four weeks "to stop constables from tracing his movements,"[29] and even when the Society was well established, White, as treasurer, had to hide as much as £6,000 up the chimney and in the cellars of his house in China Lane, Piccadilly, Manchester, as the trade unions had no legal security for their funds in the banks.

John White's work was well repaid, for by the 'thirties the framework of a strong union had been created. The highest authority in the Society was the Delegate Meeting attended by representatives from every branch. Central organisation was effected through an "acting branch." This branch was chosen every second year by vote at the Delegate Meeting and handled general correspondence from branches, called Delegate Meetings, received accounts from the branches and instructed them on the sums necessary to be remitted under the scheme for equalisation of funds. This latter scheme, said to have been originated by the Yorkshire Mechanics' Friendly Union Institution in 1822,[30] and common to both this Society and that of the Steam Engine Makers allowed for the remittance at stated intervals, from branches which had sums of money in hand greater than the average per member throughout the whole Society, to branches whose funds were below the average. This enabled branches to fulfill their commitments to members even when their expenditure was heavier than the income from contributions. In the absence of legal protection for the funds this method prevented embezzlement, when it occurred, from being as serious as it could have been in a very prosperous branch. Beyond these measures, and the Delegate Meeting, the running of the Society and interpretation of rules was entirely in the hands of the branches.

The branches, invariably meeting in public-houses as the most congenial and utilitarian place for transacting all their business, were conducted by regularly-elected officers and a branch committee. Payment for services was usually in beer and a "drink steward" ensured that none went dry. The landlord of the House where the Branch met acted as the treasurer and it was at his hostelry that members on "travel" received their "beer, bed and breakfast" and contacted the branch secretary regarding vacancies in the town. The branch box was kept by the landlord though access to it was governed by strict rule.

> "the box shall contain three different locks and keys outside also three different locks and keys for the cash drawer which shall be kept by the president and the two acting stewards."

A necessary rule, perhaps, but one leading to heavy expenditure on repairing boxes and replacing locks when the three officers failed to attend together.[31]

In the early years branch meetings, and particularly initiation ceremonies, in common with most of the trade societies, were surrounded by mummery and rituals to ensure that the Society's policy and membership were not carelessly disclosed to the employers or the Government. The engineers did not go to the lengths of some trades but before 1834 the Rule Book consisted of jumbled paragraphs which were explained only to members,[32] and the purchase by the Huddersfield branch, when it was formed in 1831, of a pistol, a Bible and ten yards of material for curtains[33] indicated the need felt for privacy and for oaths both spiritual and temporal. With curtains drawn to

THE FRONT PAGE OF THE CASH BOOK
OF THE HUDDERSFIELD BRANCH OF THE OLD MECHANICS

keep out prying eyes, hand on the Bible and pistol pointed at the heart, the newcomer swore to keep the password and never to disclose the business of the Society.

But with the prosecution and subsequent deportation of the six Dorchester labourers in 1834 for administering an illegal oath in their Society, these rituals fell into disuse. The Huddersfield branch sold their Bible in 1835, and later their pistol, and by 1840 the password had been discontinued in the Society as a whole.

The benefits paid by the "Old Mechanics" and covered by the contribution of 6*d*. per week were donation, travel and funeral grants to a member or his wife, and there was provision, in 1834, for levies to cover accident grants and strikes. No definite trade policy was either formulated or pursued, but shorter hours of work and payment for overtime, protests against "illegal" men working at the trade and objections to "overburdening the shop with apprentices" appear consistently as issues causing conflicts between the masters and the men. It was these issues, rather than direct demands for higher wages, which were the causes of the three chief strikes between 1831 to 1838 in which the Society directly or indirectly took part.

In 1831 a strike lasting over six months took place in Bolton at Dobson's & Barlow's, the oldest and at the time the largest textile machine-making factory in the country, for "a reduction of our time of work" to ten hours a day and for the restriction of apprentices to one for every four journeymen. While there is no direct evidence of participation by the Society, delegations and collections were organised to such effect that £1,835 8s. 0d. was raised by subscriptions in 28 different towns in Lancashire and Yorkshire. This would hardly have been possible without the Society's assistance.[34] In 1833 the engineers in Glasgow were also involved in a dispute over the number of apprentices and to assist them delegates were sent from Manchester and other towns to Glasgow.[35] The best known and most widely-publicised strike took place in London in 1836 over the demand for a ten -hour day and additional payment for overtime. Hitherto in the chief shops in London the men had worked a regular ten and a half hour shift and often worked on to 8 or 10 p.m. at the ordinary rate. The men demanded—and for this purpose formed a joint committee among several trades—a ten-hour shift with payment of time and a quarter from 6 p.m. to 8 p.m., time and a half after 8 p.m., and time and a half for night work, each day to stand by itself. Maudslay's and Napier's of Lambeth were two of the shops where the men struck work and after an eight months' strike during which £5000 was raised and spent, a complete victory was gained.

The hopes of the London employers that the new machines and new men had ended the power of the "combination" against which they had petitioned in 1799 were proving to be unfounded. The old "combination" was being replaced by a new and equally powerful one of the "new men." Lancashire employers too while claiming on the one hand that now "machinery is made almost by labourers whereas before it required, without these tools, first rate workmen," admitted that wages were kept high for "they have combinations among themselves and they are very tenacious of their rights."[36]

The years following the amalgamation with the Yorkshire Friendly Union of Mechanics in 1838 were largely devoted by the "Old Mechanics" to developing in its rules and policy the experience gained in more than ten years of steady growth. Lessons were learnt too from the meteoric rise and fall of numerous other societies in their own and other trades during the same period.

First, centralisation, which proved necessary both organisationally and legally if registration under the Friendly Societies' Act was to be contemplated, was carried a step further. In 1838 an attempt was made to concentrate the government of the Society in the Manchester branch and in 1839 a General Secretary, Robert Robinson of Manchester, was appointed on a part-time basis. Such moves were not accomplished without local rivalries and self-government claims by the branches, but were further consolidated four years later. It was decided at the 1843 Delegate Meeting to establish an Executive Council for the Society and Robinson was placed on a full-time footing, receiving £2 a week in 1845.[37]

The appointment of a full-time official for a trade union was an unusual step at that time but for the engineers a logical and necessary one. The Executive Council, drawn from the Manchester 1st and 2nd branches, met in the evenings and there was need for some one to be available to deal with the day-to-day business of the Society at all hours. Besides the Executive, provision was made for a General Executive Council consisting of the Executive and an equal number of representatives from branches outside Manchester. This body met less frequently and was called upon to decide general issues of policy. An attempt was also made to develop common interests among the members by financial support for the *Mechanics Magazine*. This was edited by a member, W. C. Pattison of Glasgow who also acted as a general agent for the Society in Scotland.[38] The magazine was not, however, a success and support was withdrawn in 1845, Robinson commenting that the opportunities for education which the magazine afforded had been neglected by the members.[39]

The strikes in Lancashire and the North in August, 1842—the so-called Plug Riots—in support of the Charter, involved the engineers but did little to influence their trade policy. While some members were imprisoned for their part in the strikes and a circular was issued by the Society asking for subscriptions to help those imprisoned or unemployed as a result of the movement, officially the Society was neutral. A vote of censure was moved on September 2, 1842, on Robert Robinson for his "impropriety of conduct during the Late Excitement" and four days later the rule was laid down that no member could claim donation benefit for being out of work due to "any Political or Popular Movement."[40] The engineers' aims were more limited than those of the Chartists, but they proved as difficult to achieve. The main concerns of the Society in these years were systematic overtime, the piece-master system, and, to a lesser extent, the use by employers of "illegal men"—men who had not served their time at the trade.

At the 1843 Delegate Meeting it was decided to send an urgent appeal to all members to oppose systematic overtime, and to secure evidence for this campaign a Court of Enquiry was set up in December of that year to consider the "evils resulting to our trade by working Systematic Overtime."[41] At the same time members were continually being summoned before the Executive Council and branch committees for being piece-masters and not sharing the piece-money equally. The Delegate Meeting in 1845 decided that stronger action should be taken on piece-work and passed a resolution that:

> "No member of the Society to undertake piece-work under any consideration—no Clubman to be allowed to work for a piece-master—no Clubman to be allowed to hire anyone to work by the piece."[42]

It was also agreed in the hope of rousing the members and the public to offer a prize for the best essay on the evil effects of systematic overtime, the competition to be advertised in *The Times* and *Manchester Guardian.* The prize was won by a Lancashire surgeon, James Binns, with an essay entitled *Systematic Overtime Working and its Consequences Moral, Physical, Mental and* Social, and was published by the Society as a pamphlet in 1846.

But strikes, to further these objects, were not to be supported from the funds of the Society. "Subscriptions throughout the town" and voluntary levies were the rather unstable foundation for any aggressive action by branches. The engineers were still feeling their way on trade questions and the first depression of the "hungry forties" which threatened the existence of the Society and led to doubled contributions, halved benefits and no liquor for officers, made the most militant members hesitate before involving the Society financially in disputes.[43]

Another feature of the emerging trade policy was the secondary role which direct demands for increases in wages played. This was partly due to the wide differentiation in wages not only in different parts of the country but within the same district.

> "Wages of engineers . . . ranged from 24*s*. to 34*s*. a week in London . . . in Aberdeen and Dundee there were rates of 15*s*. In Northumberland 18*s*. to 20*s*. was a common wage. In Lancashire some skilled mechanics worked 60 hours a week for from 24*s*. to 25*s*. . . . and in the higher class of engine shops 57½ and 58½ hours was the week's work and wages from 28*s*. to 30*s*."[44]

These figures give a picture both of the complexity of the problem and the practical impossibility of drawing up a uniform wages policy. But the main reason for the relative absence of disputes and resolutions on wages issues lay in the acceptance by the Society of the prevalent "supply and demand" theory as applying immutably to wages. The rate of wages paid was seen as the equation of the amount of labour available to the amount of work to be done; if labour was scarce, wages would rise; if plentiful, wages would fall.

While in each shop measures would be taken to prevent undercutting of wage rates, and reductions always resisted, the main efforts of the Society were concentrated on removing the surplus engineering labour from the market by opposing systematic overtime, shortening hours, refusing to allow "illegal" men to enter the trade and keeping the number of new entrants through apprenticeship to "the standard regulation of the trade, namely, one boy to four men."[45]

Such a policy—slowly hammered out in these and succeeding years—implied, if it was to be successful, organisation of the whole trade. Division of labour did not as yet prevent skilled workers in one trade working when necessary at another, and rival sectional societies, one on strike and the other working, spelled failure, no less than the existence of large numbers of workers belonging to no society. Steps were therefore taken, both in rule and practice, to widen the basis of the Society and to improve its relations with other societies.

The widening that took place was horizontal and not vertical. A "legal" apprenticeship to one or other of the skilled trades, or the eldest son of a member, born and bred to the trade, was held firmly as membership qualification. Those who had not served their time were only admitted if they had worked seven years continuously at one or other of the trades. These restrictions on membership derived directly from the policy and structure of the Society. The obligation to grant donation benefit meant that full regard had to be paid to members' technical qualifications and their ability to keep in employment. Similarly, insistence on apprenticeship or something akin to it and on limiting the number of apprentices, were the methods chosen for controlling the supply of labour.

In essence, however, the restrictions were qualitative rather than quantitative. In spite of the early hopes of some employers, the "self-acting" machines had in no way reduced the need for skilled fitters, joiners, pattern-makers and smiths and the new machines, particularly the slide lathe, if they were to be used to full capacity required apprenticed skilled workmen. Apart from the labourers, the number of workers in the engineering industry ineligible to join the Society due to lack of skilled qualifications was not large, and with experience pointing to success by organising the skilled workers alone, no thought was given to organising the labourers as well.

The horizontal widening, reflected in the decision in 1841 to allow machine joiners to become members and in 1842 to add the word "Millwrights" to the title of the Society, marked an important step towards closing the gap between the older skill of the millwright who in 1824 "would not work with an engineer, they thought it rather a disgrace"[46] and the newer skill of the "new class of men."

Joint Committees and the Newton-le-Willows Dispute

In 1840 a United Trades' Association of the "Five Trades of Mechanism," millwrights, engineers, iron-moulders, smiths and mechanics, had been formed in Manchester with a newspaper, the *Trades Journal* to foster unity and settle disputes among the trades.

This body was short lived but in 1844 the attempt by employers in the North to crush trade unions by the use of the "quittance paper" or "character note" led to the formation of a much stronger federation. This body was known as the Mechanics' Protective Society of Great Britain and Ireland.

All engineers were welcomed in this Society, barriers between different crafts were broken down and mechanics, engineers, millwrights, moulders, smiths, and boilermakers joined the different branches that were established in Manchester, Liverpool, Bury and Bolton. The purpose of this Society and its branches was not in any way to rival or compete with the existing trade unions among engineers, but rather to act as a defensive alliance between the different societies so that if one trade was attacked "the whole of the trades in that shop shall strike."[47]

The "Old Mechanics" played a leading part in building this new Society. John White was a trustee, Adam Booth of Manchester No. 1 branch was on the committee and Robert Robinson campaigned to set up new branches and was received with "raptuous cheers" when he visited Liverpool for this purpose late in 1844. At this meeting he told of the formation, after a meeting in the Clarendon Hotel, Manchester, of a Masters' Union,[48] "the object of which" wrote a contemporary "was, by a complete combination of themselves, to reduce the wages of their workmen, to curtail the privileges they enjoyed and to break through the established rules and customs of the trade."[49] The weapon chosen to achieve these ends was the "Quittance Paper" which was to be given to every worker on leaving and had to be produced on starting in a new shop. On this paper was to be written the rate of wages paid, the opinion of the employer of the workman's character and the reason for leaving employment.

On January 6, 1845, after a preliminary skirmish in Bolton the previous year, the battle on the "Quittance Paper" began in earnest in Bury. The men at Walker's Foundry, Bury, had refused to work overtime until the quittance paper was abolished, the masters tried to retaliate by cutting wages and 350 men struck work. In February the strike spread to other shops and the Protective Society branch in Bury took over the conduct of the strike. The leader of the men was a member of the "Old Mechanics," John "Rise and Shine" Rowlinson. During the strike he composed the temperance song which started—

"Rise and Shine through every Nation
O thou Temperance Star Divine"

and he daily led the engineers on the streets of Bury playing instruments and singing his song and preventing knobsticks going to work.[50]

Support for the strikers came in from 35 different towns in Lancashire, Yorkshire and Cheshire. The men raised more money through a hut on Kersall Moor during Whit-week where they displayed their sign "Flint and Steel" and had a large flag flying which was inscribed "Rise and Shine." The masters employed ten agents to recruit "knobsticks" and many struggles took place to prevent them reaching work—in one struggle a young striker was stabbed to death by a "knobstick"—but in spite of these methods the men were eventually successful after an eight months' strike. The masters withdrew the quittance paper.

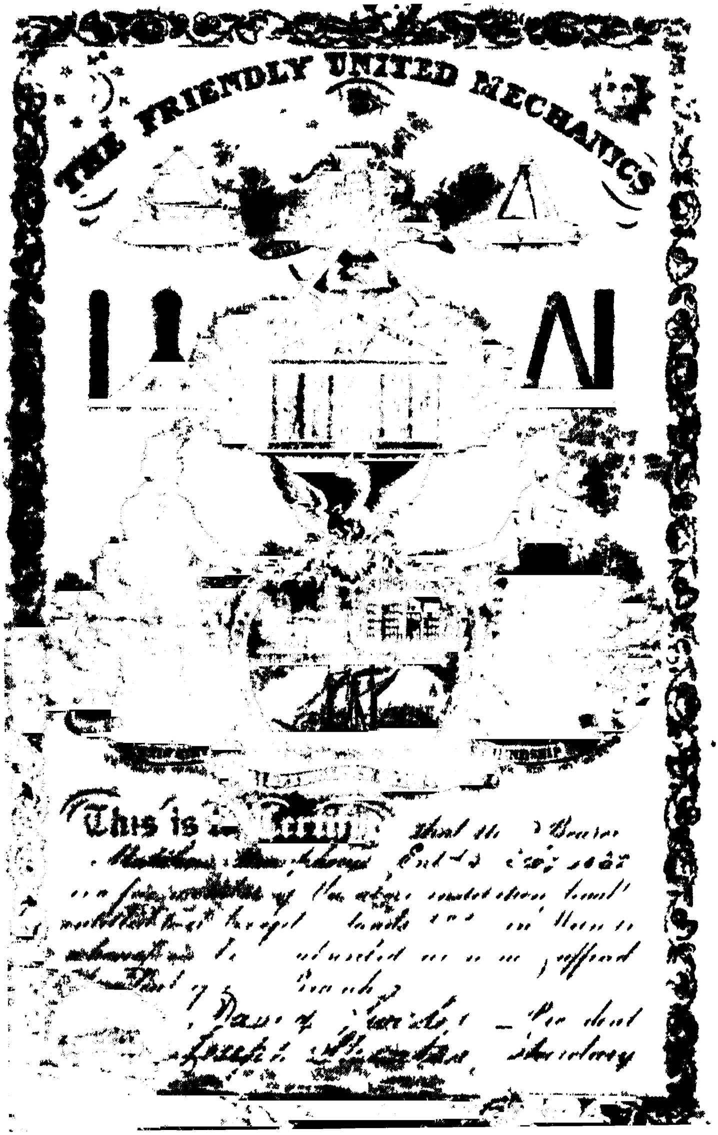
In London a similar joint committee—though not connected with the Protective Society—between the different Societies had been successful the year before in reducing hours of work in some shops from 60 to 58½ without a strike.

The Protective Society branches soon disappeared when victory had been won, as did the joint committee between the London societies, but they had driven home the lesson that to achieve any major or lasting improvements in working conditions combined action was necessary. And the problem of how such joint action could be effected on a continuous and national basis began to be "the only question which kept its hold on the minds of several branches of the iron trade."[51]

Before national unity was achieved however, the stronger trade policies adopted by the "Old Mechanics" at the 1843 and 1845 Delegate Meetings involved the Society in a serious dispute with both the employers and the law and led to much heart-searching—not as to the correctness of the trade policies—but as to the best method of carrying them out.

In August 1846 a strike occurred at Jones & Potts, locomotive builders, of the Viaduct Works, Newton-le-Willows. The men struck work against the large scale employment of "adult" apprentices and "illegal" men. The Society did not directly support the strike from the funds but issued the usual appeals for voluntary contributions to assist the men. The masters, having been thwarted in their attempts to crush the societies by use of the quittance paper, this time called in the law. On November 26, when the men thought they were on the eve of victory, warrants were issued against some of the strikers and "seventeen men at the dead of night and in the depth of winter were dragged from their beds to prison." On one of the arrested men was found a letter from Henry Selsby, who had succeeded Robert Robinson as General Secretary of the "Old Mechanics" on the latter's resignation at the close of 1845. It enclosed £10 for the strikers, the result of a voluntary collection. This letter led to the arrest the following day at the offices of the Society, 69, Dale Street, Manchester of Selsby himself "who was dragged off to Warrington, his locks broken, his place ransacked and his papers taken without any legal authority whatsoever."[52] In all 27 members were arrested and charged with "unlawfully conspiring, confederating and agreeing to oppress John Jones and Arthur Potts.

The arrest of Selsby threatened the whole existence of the Society and of other trade unions. Meetings were held up and down the country to raise funds for the defence of the men and the best lawyer willing to take the case, W. P. Roberts, the Chartist lawyer, was engaged. The prosecution was equally active and when the men were brought to trial at the Liverpool Assizes in March, 1847, the indictment was 57 yards long, had 4914 counts and occupied 990 folio pages. In



THE FRIENDLY UNITED MECHANICS

This is [illegible] that the [illegible]

MEMBERSHIP EMBLEM OF THE OLD MECHANICS

spite of the brilliant defence by Roberts, eight members, including Selsby, were found guilty. The case was immediately taken to a higher court and the conviction was quashed on appeal before the Queen's Bench, but this near escape had shaken the members, and doubt had been cast once more on the freedom of association of the workers.

At the Delegate Meeting the following summer caution was the keynote. While the members would not relinquish their embryo trade policy—it was beginning to be part of the life blood of the Society—they wished to avoid a repetition of Newton-le-Willows in the carrying through of this policy. With this in view the following rule was adopted:

> "The Executive Council or General Secretary shall not engage in any misunderstanding between employers and employed seeing that such interference is so injurious to the interests of our Society and calculated to involve the members in legal proceedings."

And it was laid down that if a strike did occur then the Society was to place the telescope to its blind eye, and the conduct of the strike was to be placed in the hands of a committee entirely apart from the Executive Council and General Secretary of the Society.[53]

As a makeshift, designed to avoid the apparent immediate danger to the existence of the Society, this rule and manœuvre just passed muster, but as a policy for a trade union with over 7,000 members and funds which had risen with good trade to nearly £25,000, it meant the acknowledgment of failure and a retreat to the days of local clubs with no central organisation of any significance.

Amalgamation

But not all members were agreed that retreat was the only possible policy. It was becoming clear to many that however much strikes and lock-outs were disliked, in however many rules of the Society they were outlawed, they nevertheless occurred and efforts would regularly be made by the employers to crush the Society. The problem could only be solved by increased strength and unity among the engineers and not by attempts to avoid the issue.

Already while the Newton-le-Willows case was still before the Courts the "talented secretary" of the Society in London, young William Newton, then aged 25, had pointed to the alternative policy of joint committees and amalgamation by forming a united committee of the London societies to assist the men of the North.[54] The appointment in 1848 of William Allan of Crewe, a well-known advocate of amalgamation, as General Secretary on Selsby's resignation, the solid propaganda work for unity of men like "Rise and Shine" Rowlinson, and the formation of Iron Trades Amalgamation Committees in certain centres increased the support for advance through amalgamation instead of retreat to isolated local friendly societies. No opportunity was lost in Lancashire by Allan and Rowlinson to point to the history of the struggles of the engineers in those parts as indicating the advantages of unity, and in London, where the number of sectional societies was great, Newton succeeded in forming an enthusiastic amalgamation committee.

The circumstances were not favourable. The "railway mania" had reached its climax in 1846 and was followed by heavy unemployment in the engineering trades in the succeeding three years. Over 1,000 members of the "Old Mechanics" were unemployed in 1848. The employers were attacking working conditions, members were emigrating, others leaving the Society and the funds were rapidly draining away, but keenness to end disunity increased rather than diminished. Following the resolution at the Delegate Meeting instructing the Executive Council to approach other societies to discuss amalgamation, branches sent in resolutions urging action. Finally on January 19, 1850, the Executive decided unanimously to invite the Executive Councils of the Engineers', Smiths', Millwrights', Moulders', and Boilermakers' Societies to elect deputations to meet and discuss amalgamation. The Moulders did not reply and the Boilermakers decided not to move in the matter until the Engineers, Mechanics and Millwrights had amalgamated, but at the preliminary meeting held in Warrington in the spring the presence of the Steam Engine Makers' Society and the General Smiths along with the "Old Mechanics" enabled draft proposals to be drawn up.

These proposals showed clearly that the object of amalgamation was to shape a new organisation that could put into effect the trade policies already agreed upon. These policies were reiterated and it was agreed that, hitherto, success had not been possible "in consequence of the division existing among us and the unwieldy nature of our societies, through being various in their constitution and management." It was suggested that strike pay should be removed entirely from the "inequality" and uncertainty of voluntary contributions and replaced by a levy on all members. To administer this fund and watch over the interests of the trade and also to placate the "self-governors" in the long-established branches, District Committees were to be set up, composed of representatives from the branches within a given area. The amalgamating Societies paid different types of benefits but the principle was proposed that all existing benefits, donation, sick, superannuation, funeral and accident, should be continued in the new Society, and to these was added emigration benefit.

These proposals were discussed in the branches of the different societies and on the whole were welcomed. *The Trades Advocate and Herald of Progress* started in Manchester in June, 1850 by the leading advocates of amalgamation as a weekly paper for the iron trades, guided the discussion and was undoubtedly instrumental in both resolving doubts and winning support for the proposals.

A second Conference was called in Birmingham on September 9. William Allan, aged 37, was in the chair and sixty delegates from seven Societies attended the conference which lasted seventeen days. The London branches of the different Societies had held an aggregate meeting before the Conference and jointly elected the delegates to represent them. One of these was William Newton and another was John Davies of the Steam Engine Makers' Society, aged 26. Amalgamation was the young men's cry. Few alterations in principle had been suggested by the branches and this Conference was chiefly concerned with filling in the details. Agreement was expressed on all sides and the only important new decision taken was to establish the Executive Council and Offices of the new Society in London. Contributions were fixed at 1*s*. per week, a sum slightly higher than that paid in any of the individual Societies and much higher than the usual contributions paid to trade societies at the time. Scales of benefit agreed to were: 10*s*. per week donation pay for fourteen weeks and 7*s*. for a further twelve weeks; 10*s*. per week sick pay for twenty six weeks and 5*s*. for a further twenty six weeks: 5*s*. per week superannuation pay for those over fifty years of age who had been in the Society for eighteen years: accident benefit was fixed at £100 and funeral benefit at £10. Instructions were given for the drawing up of rules and a Provisional Committee, with William Allan as secretary, was charged with the responsibility for taking the preliminary steps for the formation of the new Society at the beginning of 1851.

After the meeting however a reaction set in. It had become clear before the end of the year that the agreement reached at Birmingham was not being matched by agreement in the branches. Even some of the representatives who were present at Birmingham began to change their minds. The Steam Engine Makers' Society failed to ratify the decisions of the Conference and a number of Lancashire branches of the "Old Mechanics" were opposed to the trade protection clauses suggested for the new Society and a vote of the membership showed a considerable division of opinion though a majority were in favour.

To their lasting credit the Provisional Committee did not falter. Though it was clear by December that not more than half of the 10,700 trade unionists represented at the Birmingham meeting would join the new Society in January and that there was grave danger of doing nothing more than adding one more to the list of already competing societies, they were convinced that amalgamation was vital to survival and that the establishment of the new Society and the commonsense of the rank-and-file trade unionist would lead to success far more rapidly than a continuation of the discussions which were becoming repetitive and unproductive.

Events proved them correct. The membership of the "Amalgamated Society of Engineers, Machinists, Smiths, Millwrights and Patternmakers" on its formation on January 6, 1851, numbered only 5000—smaller than the "Old Mechanics" in 1850. Thirty three branches of this Society had refused to amalgamate and had recalled Henry Selsby to act as the General Secretary of the "rump." Only a fraction of the Steam Engine Makers' Society of Liverpool had come over and the London Smiths were still debating. In fact the "Amalgamated Society" in the first month was not amalgamated at all but merely five-sevenths of the "Old Mechanics" under a new title. But this was the lowest point reached. On January 4 the first number of *The Operative* edited by William Newton appeared. This ably written weekly paper was not the official organ of the new Society but all reports of A.S.E. meetings and statements of policy were prominently displayed, and it commenced with a series of reasoned and effective articles on the advantages of amalgamation. On January 9 the Executive Council issued a "mild, dignified and conciliatory recruiting address"[56] in a thousand copies. Propaganda in the branches continued to such effect that Selsby, in the *Trade Report* of the remnants of the "Old Mechanics," complained bitterly of the

> "agitation kept up by certain members . . . going from branch to branch in the most stealthy and discreditable manner."[57]

These measures and the existence in a physical form of the idea of amalgamation led to growing support for the new Society. In February there were over 7,000 members in 82 branches and William Allan could write in the *Monthly Report* "that confidence is restored and our Society raised beyond the reach of opposition." By June there were over 9000 members in 100 branches.

The opposition in the "Old Mechanics" was mainly to the new sick benefit which had not previously been paid by that Society and to the militant trade protection rules. The members were not convinced of Newton's logic that since "societies connected with the engineering trades have hitherto in their rules repudiated all strikes and turnouts but have not been able to avoid them"[58] the trade protection funds were necessary both to win and avoid strikes. They still clung to the conception that all which was required of an organisation of working engineers was the provision of benefits to meet such contingencies as sickness, unemployment, old age and death. They could point with pride to nearly £75,000 paid out in accident, donation and death benefits over twenty five years.

But disagreement on these issues had existed before and did not provide a valid reason for staying outside the Society. In May the dwindling "rump" decided at a Delegate Meeting by nine votes to six to join the Amalgamated Society on July 26—their twenty-fifth anniversary—but at the same time pledged themselves to unremitting agitation inside the Amalgamated Society for the abolition of the trade protection rules.[59]

The opposition of the Steam Engine Makers, numbering nearly 2000, was of a different character. Of all the societies discussing amalgamation they were the only one approaching the "Old Mechanics" in size and they had a longer, though less successful, history. They dimly saw amalgamation with a much stronger Society as tantamount to annihilation. They felt they would be outvoted and powerless to mould the new Society according to the principles they had developed. While some branches with about 500 members saw further than this parochialism and joined the A.S.E. in 1851 and from time to time single branches came over, they were a minority and, although the time limit for amalgamating fixed at Birmingham was extended three times, the Steam Engine Makers continued a separate existence.

The remaining societies who were present at Birmingham and whose combined membership only totalled 700 were faced with few problems of principle. They stood to gain rather than to lose by amalgamation and were waiting to see whether the new venture would be successful. In May, 1851 the "New" Society of Millwrights joined, in July the "Old" Society of Engineers and Machinists of London, and in September the London Smiths were admitted bringing the membership up to 10,841. This marked the end of the first phase of amalgamation. The foresight and courage of the amalgamators and the Provisional Committee had been justified, and "the good ship launched sixteen months before on the angry sea of sectional discord and jealousy had at last safely crossed the bar into safe harbour."[60]

CHAPTER II

The Testing Time: The 1852 Lock-Out

The foundation of the Amalgamated Society of Engineers, and its triumph over the doubts and dangers of the first few months marked a new stage in the development of the British Labour Movement. In the place of the unorganised and often leaderless strivings of the Chartists, the violent fluctuations of the general trade unions, the local and narrow clubs and benefit societies of the craftsmen surrounded by "mysteries" and secrecy, was a national Society, with centralisation and stability its hall marks. Courting publicity and with well-known and respected officers at its head, the new organisation had a membership and income greater than all the other societies in the engineering industry put together. It is true that the names of the officers, most of the rules, the methods of finance and a part of the membership were identical with those of the "Old Mechanics," but the spirit and strength of the Amalgamated Society was new. Perspectives and possibilities were now opening up before the engineers which hitherto had been obscured by rivalry and lack of confidence. In the words of a worker standing up to the manager of the Stratford railway shop:

> " . . . things were different now to what they had been . . . the Society was in a position to carry out its resolutions . . . he would rather sacrifice his situation than go in the face of 10,000 members."[1]

How different and how strong was to be seen in the two succeeding years, the testing time for the Society.

With this vision of the strength of the Amalgamated Society it was small wonder that the members should ask what they were going to do with this "gigantic association."[2] William Newton, the vigorous and able architect of the amalgamation hastened to answer the question through the columns of his paper *The Operative* claiming that "to destroy the redundancy in the labour market" ought to be the first object of a trade society.[3] Redundancy of labour resulting in uncertainty of employment, low wages and bad conditions, was the main enemy of the engineers. As the reasoned preface to the rules of the Society in 1851 pointed out:

> "We are willing to admit that whilst in constant employment our members may be able to secure all the necessaries and perhaps some of the luxuries of life . . . notwithstanding all this there is a fear always prominent in the mind of him who thinks of the future that it may not continue . . . How much is contained in that word continuance and how necessary it is to make it a leading principle of our association."

This aim of ending redundancy, in a Britain where unemployment meant the Poor Law and the workhouse, dominated the whole policy of the Society. Wages and conditions of work were seen as secondary issues, dependent for improvement on the achievement of the main aim. Benefits during unemployment, sickness, old age and on death, were palliative measures designed to tide the more unfortunate over difficult periods but were never an end in themselves.

Having made clear the aim, inherited from the struggles and clarified by the experiences of the earlier Societies, the problems of day-to-day policy and methods of implementing the aim had to be solved.

From the outset independent working-class political action to achieve this aim was rejected. "We do not allow any political matter to be discussed at all nor entertained among us."[4] The engineers had held aloof from the Chartist movement of the previous two decades due to differences in outlook and tradition, and the failure of that movement was no recommendation to pursue the same course even with different tactics and programme. Ernest Jones, the Chartist leader, who attempted to salvage some organisation from the wreckage of 1848, paid particular attention to the engineers in his paper the *Notes to the People* but failed to make any impression.

With political action outlawed, Newton pointed to two ways in which redundancy could be destroyed ; by reducing the hours of labour and by setting up associative workshops financed by the Society.[5] Although these two policies, trade protection on the one hand and co-operative workshops on the other, were by no means mutually exclusive, they led to differences in outlook within the Society, not on which of the two policies should be pursued, but on which the greatest emphasis should be placed.

The "Old Mechanics" had often discussed suggestions for the investment of their funds in workshops to be erected and owned by the Society which would profitably employ their members who were out of work,[6] but the general opinion had been against such investments, the Delegate Meetings regularly rejecting such projects. However the activities of the Christian Socialists, Charles Kingsley, J. M. Ludlow and men like Viscount Goderich and Thomas Hughes, in advocating co-operative workshops, and their newly-formed Society for the Promotion of Workingmen's Associations, had a marked influence on the leaders of the engineers, and the large accumulated funds at the disposal of the Amalgamated Society increased the interest in the question.

Associative workshops were seen as the answer to many problems facing the members. Some saw them as a means of profitably investing the Society's funds—"for there is no class of men in the country but the working class who are so neglectful of their own interest as to allow money to lay idle."[7] To others it appeared that such workshops would reduce redundancy and prevent a drain on the funds by out-of-work members, and there were those who saw in them a means of transforming society itself and gaining for the workers the whole fruits of their labour. "The workers," declared *The Operative*, "can never thoroughly emancipate their order until they gather capital and employ machinery for themselves."[8]

As a solution to all these problems co-operative workshops seemed to present no difficulties but to be a straightforward matter of common-sense which had only to be undertaken to achieve success, and was accepted by the majority of the membership but without the enthusiasm expressed by the leaders.[9]

To the rank and file, amalgamation meant the power to reduce redundancy of labour and improve conditions of work by more aggressive measures in the workshops. The trade protection resolutions adopted at the Birmingham amalgamation meeting and incorporated in the rules of the new Society, laid down some of the policies to be pursued ; systematic overtime was to be repudiated and any exemption decided by the District Committees ; the number of apprentices was to be restricted to the proportion of one apprentice to four journeymen ; the cheating, slave-driving system of piece-work, as it was then operated, was to be resisted. A fourth policy, though unwritten, was fully accepted and operated by the members ; it was opposition to "illegal" men, men who had not served their time or seven years at the trade, using the tools of skilled workers. And, to assist in the operation of these policies a "Trade Protection Fund" was established under the control of and levied by the newly-created District Committees. The levies for this fund were limited to 5*d.* per month per member, though additional levies could be sanctioned by the Executive Council, and from the Fund 15*s.* per week was to be paid to members who had left or been forced to leave their situations in defence of the rules and customs of the Society.

The spirit of unity engendered by the amalgamation gave to the rank-and-file members tremendous faith in their power to put these policies into effect and convinced them that where necessary the strike weapon could be employed with both impunity and success. Allan, Newton, and the Executive Council were not, however, in favour of such strikes. They believed that the mere fact of amalgamation "will in a great measure supercede the necessity of strikes and turnouts," and that "employers are too wary to resist any just demand on our part when they know that we have the power to enforce it."[10]

By May, 1851 this difference of opinion between some of the rank and file and the leadership was noted by William Allan in the *Monthly Report :*

> "Already we find that every district is on the alert and endeavouring to remedy some grievances of long standing ; this we are, of course, pleased to see ; but we are also deeply imbued with the necessity of caution . . . It is not necessary because we may possess increased power to use it unjustly. Our opinion is, that its exercise should be rather moral than physical ; that its possession should be a preventive rather than a cure . . . We shall be able . . . to greatly advantage our condition without resorting to strikes or any hostile proceedings."

In practice, both approaches were yielding dividends. It was a period of good trade in the industry and while numerous branches and District Committees could point to successes won by precipitate, almost lightning, strikes, the Executive Council could point to equal advantages gained from deputations and interviews without resort to stoppages.

The Oldham Dispute

One firm was proving very troublesome. This was Messrs. Hibbert and Platt of Oldham, which employed nearly 1500 workmen on the manufacture of textile machinery, and was the largest engineering factory in Europe. Managing director of the firm was John Platt, chairman of the local Liberals and later Liberal M.P. for Oldham. A strong opponent of trade unions, he knew that one firm alone could not defeat a combination of the workpeople and he therefore consistently advocated combinations of employers. The degree of specialisation possible in a firm of this size made the piece-work and "illegal" men problems particularly prominent. A mass meeting of the men in April, 1851 requested that all systematic overtime and piece-work should cease after April 21 and that labourers should not be allowed to work boring, planing, shaping and slotting machines. A further demand was for the dismissal of an obnoxious foreman, a piecemaster named Bernard. These demands were sweeping but they reflected the spirit of the amalgamation. The men had judged their strength fairly accurately for it could be reported to them on May 5 that Platt had agreed to each of their demands save the dismissal of the labourers from machines. The day before, the Executive Council had discussed the question and expressed full support for the men on all demands but resolved that they could not

> "consent to the men leaving their situations because they may not at present be able to obtain the working of the machines."

Newton reported that he had been invited to visit Oldham by the men and received the approval of the Executive.

On his arrival in Oldham, Newton was elected by the men, along with Edward Rye, the President of the Oldham branch, Thomas Norbury and William Hemm, of Manchester, representing the remnants of the "Old Mechanics" (who were just about to amalgamate) to interview Platt. Platt made further concessions—there were urgent Russian orders pending—but on the employment of labourers he would promise nothing before the following spring or summer, and agreed to remove them then only if his competitors were forced to do the same.

Platt, the deputation and the Executive Council knew that this particular demand was the men's weakest point. The degree of specialisation of operations in these works, the poor case that could be put before the public for this demand, and the truth in the remark of Platt's manager at the interview that the employment of labourers on these "new" machines had been partly brought about by "the manner in which (skilled) workmen had conducted themselves towards these machines, always leaving them in apparent disgust when an opportunity offered"[11] made it a problem to be handled with care.

The delegation reported back to a meeting on May 9 and Newton spoke strongly in favour of accepting Platt's offer. But after a meeting lasting five and a half hours, finishing after midnight, the men by 450 to 120 voted for "nothing but the full demands" and strike notices were handed in for May 17.

Platt called a meeting of masters in the machine-making and engineering trades on May 13 to ascertain the backing his firm would get in the event of a strike. While verbal support was forthcoming a strong competitive spirit prevented any real enthusiasm, and Platt made a further concession to a deputation of the men by offering to finish all labourers by Christmas that year. At the same time the Executive Council had sent instructions to the men to accept Platt's offer if no further concessions could be obtained. When the deputation reported the extra concession to a meeting of 800 workers the terms were accepted and the dispute officially closed.

It was a preliminary trial of strength, and the Society had won, but both sides knew that the peace was not on very sure foundations.

The successes gained in the smaller disputes and the victory in Oldham encouraged the branches to urge greater unification in action on trade policies. The amalgamation meeting in Birmingham in September, 1850 had instructed the Provisional Executive Council to "take steps for its [systematic overtime] immediate discontinuance by ascertaining the opinion of our members and the practice of various localities in relation thereto, and issuing a general order for all districts to simultaneously adopt the resolution."[12]

No action had been taken on this resolution, but pressure from branches, particularly in Lancashire, led to circulars being issued on July 11 calling for the views of the members on systematic overtime and also on piece-work. The voting was:

For the abolition of systematic overtime	5,297.	Against 18,
For the abolition of piece-work ..	5,709.	Against 16.

Meanwhile the Manchester branches had acted on their own initiative and at an aggregate meeting in October resolved to work no more systematic overtime after November 1. The result of their action was that the largest firms in Manchester, including Sharp Brothers, Roberts, Dobinson and Company, and Parr, Curtis and Madeley abolished it.

These votes were so definite and the growing desire of the branches for nation-wide action, as shown by the increasing number of local disputes, so strong that the Executive Council could no longer postpone the issue. On November 20 the Executive Council unanimously passed a resolution moved by Newton "That all engineers, machinists, millwrights, smiths and pattern-makers cease to work systematic overtime and piece work after the 31st December, 1851," and on November 24 two circulars were issued embodying this resolution, the first addressed to Society members and the second to the employers. With a membership of over 11,000 behind them, with nearly all the sectional societies amalgamated, and with a record of successes, the Executive Council began to share the "dare-all" enthusiasm of the rank and file, and in the words of the Circular proclaimed "It is time the system [overtime and piece-work] should be put an end to; and with the time has come the resolution to annihilate it."[13] But nothing was further from the minds of the leaders than a strike. They were convinced that the strength of their organisation by itself was sufficient to bring the employers to terms. No preparations were made, no tactics planned. The Executive Council waited for the trumpet blast of the circulars to bring down the walls of Jericho.

The same cannot be said of the employers in the two main engineering centres, London and Lancashire. John Platt had not taken the defeat of June lying down and he continued his efforts to unite the employers. His agreement with the Society bound him to discharge the labourers by Christmas of 1851 and though he had already claimed in July that the agreement was inoperative due to the workers not carrying out some detail on their side, it was evident that there would be serious trouble if he failed to keep his promise.

On December 11 he managed to get the Lancashire employers together once more and this time the successes of the engineers since the previous meeting in May and the threat contained in the new circular from the Society on overtime and piece-work made a stable organisation possible. Agreement was reached by thirty four masters "employing 10,000 hands" to close their establishments in sympathy with Platt's if any strike on the labourers took place at the latter firm. A declaration to this effect was published in *The Times* on December 20. At the same time a meeting of London employers from forty six establishments was held and after hearing a deputation from Manchester and discussing the circular from the Society they formed themselves into "The Central Association of Employers of Operative Engineers" and pledged a sympathetic lock-out if workers in London or Manchester stopped work. This statement was also published in *The Times* on December 25.

The London meeting was attended by Joshua Field, H. Maudslay, John Penn, J. D. A. Samuda, John Rennie, and Scott-Russell, amongst others, and they appointed the lawyer Sidney Smith as their secretary. He was already known to the engineers for his rabidly anti-working class articles in the *Weekly Dispatch* and as a professional agent for employers. In his own words "I was employed to organise the employers: they were entirely at sea as to the means of meeting the combination of the workmen and they came to me as an individual accustomed to such matters."[14]

It was evident from his appointment that the employers intended not merely to fill the advertising columns of *The Times* with declarations but to defeat thoroughly the Amalgamated Society which they saw as a threat to their own existence.

The Society, shaken from its early complacency as to the course the struggle might take, though not as to the ultimate outcome, rallied its forces and made clear its aims. Mis-statements by the Manchester employers and by the letter writer "Amicus"—whose identity was later revealed as being that of William Fairbairn's son, Thomas Fairbairn[15]—regarding the claims of the engineers, which the employers were doing their best to present as a demand to become the "self-constituted dictators of the rules which are to guide the management of our establishments"[16] and in particular making much of the "discharge of labourers from machines," were answered by Newton in *The Times* on December 25. He and the Executive Council fully realised the lack of support they would get on this particular issue and on December 28 unanimously agreed that:

> "the enforcement of the request of the Oldham workmen that Mr. Platt should discharge the men from the machines would endanger the carrying of other and more important measures in the trade and would tend to strengthen the agitation of the employers to create public feeling against our Society, we therefore instruct the members of Oldham not to leave their situations if Messrs. Hibbert and Platt refuse to carry out the agreement."

Overtime and piece-work were more burning issues to the whole of the membership than labourers on machines, and every effort was made by the Society to keep these issues to the forefront.

On December 30 a great meeting was held in the Hall of Commerce, Threadneedle Street, attended by over 2,000 workers to put the issues squarely before the members and the public, and here an offer was made to submit the main issues to arbitration.

> "The men would abide by the decision of independent parties; let persons be appointed whose whole soul was not wrapped up in commercial speculation, men who identified themselves not merely with commercial progress but also with the progress of the industrial classes. By their judgment the men would be willing to be governed."[17]

The Society was determined but conciliatory.

However a further issue, calculated to confuse the public, had been introduced. The position of the Society as the strongest organisation of the working class in a Britain just recovering from the shock of Chartism, and in a Europe torn with revolutions three years previously, led to wild assertions as to the real aims of the engineers. Into the demand for the abolition of systematic overtime was read "anarchism," into resistance to piece-work "revolution." "Amicus," and *The Times* joined in the cry and Lord Shaftesbury could compare the demands of the engineers with the revolution in France, and write to William Fairbairn on December 29 congratulating him on his "bold, manly and righteous course of resistance to the Louis Blanc conspiracy of the mechanics and engineers."[18] The engineers rejected these insinuations as foreign to their policy and outlook and felt so strongly on the issue that when Ernest Jones the Chartist leader attempted to speak in their support at the Hall of Commerce meeting, they booed and shouted until he left the platform, refusing to hear him as "the enemies of the Society might make a handle out of his presence."[19]

The Lock-out

It was in this background and atmosphere that the Society members went to work as usual on January 1, 1852, but refused to work overtime. On January 10, although the workers at Hibbert and Platt had not struck work over the employment of labourers, the Lancashire and London employers closed their works, locking-out about 3,000 members and other men and labourers estimated at three times that number. The trial of strength had begun.

The members realised from the advertising methods already used by the employers that they were in the public eye, and that publicity was necessary to win support. A series of meetings was held in London and the provinces, the biggest being in the Free Trade Hall, Manchester, addressed by Newton and described as "the greatest meeting ever held by the working class of England within a building." One writer estimated that nearly 10,000 workers crammed themselves into the hall.[20] Every statement issued by the Executive Council was sent to the press and all letters or statements by the employers answered by circular or letter from Newton or Allan. 10,000 leaflets and 5,000 subscription sheets were issued by the Executive in addition to District Committee activities.

The "Trade Protection Fund" rapidly proved unable to support the members and non-members out of work and, since the constitution made no provision for additional levies, an appeal was sent out by the Executive for members still in work to levy themselves a day's oyers a week, an appeal which met with a good response. Meetin of the held with the Iron Trades and with the Metropolitan Trades Corof sub- of London, and speakers were sent round the country to other wore the class organisations. Led by the Masons of London with £217, the Fide Spinners of Manchester and the Shipwrights of London with £200 each, the Joiners of Manchester with £177, the Pianoforte Makers of London and Wire Drawers of Manchester with £100 each, the many organisations of the working class answered the call. An appeal in the columns of *Reynolds* newspaper brought in over £150 and many other organisations and individuals helped, including a loan of £1,000 from Lord Goderich. In all £4,899 15s. 6d. was subscribed by trade societies, £4,034 7s. 3d. by other societies and individuals and £1,065 in loans.[21] The Society members in work levied themselves over £12,000 in addition to their contributions.

Great restraint was exercised by the members. With the exception of the close watch kept on that "literary gladiator in the service of capital,"[22] Sidney Smith, who later complained "I had pickets regularly placed upon me . . . at my office every day,"[23] the members employed no aggressive tactics. "Not a single picket was appointed throughout the dispute; not a single charge of assault, or threat, or intimidation was brought before the magistrates, either in London or any district where the dispute occurred. I think there never was a dispute in this country which was so free from charges of that description while the dispute was going on for there was not a single charge against any member of the Amalgamated Society."[24]

Meantime the employers were doing everything to win public opinion and to extend the lock-out. By their clever play with the question of labourers on machines they had convinced a wide section of opinion that this was the main demand of the Society. The real demands regarding overtime and piece-work were pushed into the background. An illustration of this was a letter which appeared in

The Times from Lord Cranworth who had been regarded by the Society as unbiassed on labour questions. He wrote to a friend on January 10 —published on the 17th—that the first demand of the men was "that masters should not employ unskilled labourers" and although Newton could reply "Once and for all we wish to say to his Lordship and to all others that it is untrue that the Amalgamated Society have ever made such a demand. If they had, judgment on that point must go against them for they are clearly wrong" [25] the damage had been done. In any case the employers categorically refused to submit the dispute to arbitration in the following imperious terms :

> "With every respect for noble and distinguished referees whose arbitration has been tendered to us . . . we must take leave to say that *we* alone are the competent judges of our business ; that we are respectively the masters of our own establishments ; and that it is our firm determination to remain so."[26]

With Sidney Smith as active as pickets would allow in London, and John Platt of Oldham "running about from town to town calling ngs of employers" [27] the number of Society men out of employ- se to 3,500 and many non-society men and labourers had to be financially. The employers tried their best to reduce contri- ns from members still in work as a letter to *The Times* on February , by Samuel Fielden disclosed.

> "A deputation of masters urged a meeting of railway directors of whom I was one, [that] we should put our railway mechanics on short time, and so disable them from subscribing to the relief of the 60,000 persons whom the masters had reduced to want."

The true aim of the employers in the struggle became clear when they published their terms under which the shops would be opened to engineers on February 1. On that date all men who would sign the following Document would be given employment :

> "Declaration by the undersigned on engaging in the employment of . . . . . .
>
> I, A . . . . B . . . . do hereby honestly and in its simplest sense and plainest meaning declare that I am neither now nor will, while in your employment, become a member or contributor to, or otherwise belong or support, any Trade Union or society which directly or indirectly by its rules or any of its meetings or transactions of its business, or by means of its officers or funds, takes cognisance of, professes to control or interfere with the arrangements or regulations of this or any other manufacturing or trade establishment, the hours or terms of labour, the contracts or agreements of employer or employed, or the qualifications or period of service. I do also declare that I have no purpose or intention to call in question the right of any man to follow any honest calling in which he may desire to engage or to make what arrangement and engagement of the workmen he pleases upon whatever terms they choose mutually to agree."
>
> (Signed)
> (Dated)
> (Witnessed)

Here, without equivocation or dissemblement, was the determination to end trade unions among the engineering workers once and for all. The Master Millwrights had tried Parliament and failed, the new class of employers were attempting more direct means. This obnoxious attempt to crush the Society served to strengthen the determination of the men to hold out. Meetings and publicity were continued but by the beginning of March the accumulated funds of the Society were fast disappearing and subscriptions from outside were not coming in fast enough to support the 15,000 out of work. On March 3 the Executive asked for loans on the strength of the Society ; on March 14 they were forced to reduce the lock-out pay from 15*s*. to 10*s*. a week ; and on the 24th they agreed to make concessions in their demands for the abolition of piece-work and overtime and appointed a deputation to get the best possible terms from the employers. The employers refused to meet the deputation and on April 4 the Council offered to withdraw its demands altogether if the employers would withdraw the hated Document.

The employers refused. Sidney Smith for the London employers and Joseph Whitworth and H. Richardson, Joint Secretaries of the Manchester employers, "would accept no submission short of subscription to that declaration of industrial serfdom which they make the condition of employment."[29] A further appeal for support was made by the Society to the Iron Trades and as this was not successful the Executive passed a unanimous resolution stating that members who were compelled to sign the Document under duress were not to be excluded. In this way the Society admitted defeat and the men slowly returned to work. In April 3,500 members were on lock-out pay, in May 2,000 (by then reduced to half pay) and by June the number was reduced to 832.

The men had remained solid to the end. Even Sidney Smith admitted this when he said :

> "I must say that they were exceedingly true to each other, much more true than the masters were to each other . . . After having once agreed that they would hold out for certain terms they did not give in until they were entirely starved ; I do not think the masters would hold out until they were ruined."[30]

The main reasons for the defeat were estimated by Newton himself at the close of the struggle :

> "It was the hostility of the press—of *The Times* particularly—hostility evinced in misrepresentation, trickery, sophistry, treachery, insinuation and denunciation which in great measure decided the contest."[31]

This estimate received corroboration from Sidney Smith who stated :

> "*The Times* had very great power in making parties hold out or give in. Had the men been supported by the press upon this occasion . . . I have no doubt they would have succeeded."[32]

The second main reason was undoubtedly the unpreparedness with which the members entered the battle. They assumed that their strength alone would win a complete victory or a satisfactory compromise and in their own words:

> "It was never intended that the expressed intention of the circular [November 24] should be carried out by anything approaching a strike. But the employers banded themselves together and resolved to begin the contest."[33]

and Newton concluded "in short we were not prepared, and in the struggle preparation for the future was not possible."[34]

Rebuilding the Society

The immediate result of the defeat—for as Allan said "it would be foolish and unavailing to deny that we have been defeated"—was the expunging at the Glasgow Delegate Meeting in June of those rules which sought to abolish overtime and piece-work and to regulate the number of apprentices. Further it was decided that future strikes were to be supported not by the general funds of the Society but by a Contingent Fund to be raised by levy only after the agreement of the majority of the membership. In the words of the August *Monthly Report*:

> "The recent Delegate Meeting has so revised our code that it has ceased to contain anything that can be obnoxious to any class . . . We do not anticipate any future struggles such as we have had for dominance of superiority . . . . . we think that both parties are wiser than they were and more moderate. For ourselves at least we can answer that we are."

A retreat—but no running away. The *Report* of a month earlier declared "We are determined that our Society shall be restored and made even greater than it ever was" but the restoration was to be through "training, discipline and organisation."[35] It was this policy, made possible by the existence of a capable and efficient leadership and the prosperity of the "golden age of British capitalism," which was to dominate the policy of the Society for the next twenty years.

For a short time after the lock-out the Christian Socialists, who were the main advocates of co-operative workshops, and their followers in the Society, found a ready ear for their proposals. The former had been of considerable assistance to the engineers during the lock-out although, Cassandra-like, they had predicted inevitable defeat.[36]

At the same meeting at which the Executive Council closed the lock-out they also unanimously passed a resolution proposed by Newton:

> "That in the opinion of this meeting, the resistance of Labour against Capital is not calculated to enhance the condition of the labourers. We therefore advise that all our future operations should be directed to promoting the system of self-employment in associative workshops as the best means of effectually regulating the conditions of labour."

Negotiations for the purchase of the Windsor Foundry, Liverpool, which had commenced in the July preceding the lock-out were continued, and on May 8, 1852 Newton reported:

> "Those workshops already established are going on well. In London about £3,000 is already invested in them, and the workmen are diligent and industrious. They are becoming as able managers of their own business as those who have presumed to manage it for them before."[37]

The two co-operative engineering workshops in existence were both in London. One was in Cambridge Road, Mile End, and had been purchased for the engineers by Augustus Vansittart, a Christian Socialist. John Musto, brother of Joseph Musto then Chairman of the Executive Council, was made General Manager. The other factory was the Atlas Works, Southwark, purchased by E. Vansittart Neale, a cousin of Augustus, a wealthy barrister who was also very prominent in the Christian Socialist Movement.[38]

The subsequent story of this co-operative endeavour provides a picture of prolonged discussion and little action. In 1854 a prize was offered for an essay on "The Best Means of Employing the Surplus Funds of the A.S.E. in Associative or other Productive Enterprise," and the adjudicators included T. Hughes, M.P., and Viscount Goderich. They awarded the prize for a plan by E. Vansittart Neale. This was discussed by the members and early in 1856 a vote was taken as to the desirability of investing £10,000 in such a project. Out of a total membership of 12,500 the votes in favour were 2,912 with 1,691 against.[39]

The substantial minority proved a noisy one. The East London branch objected to their Councilman, William Newton, voting in favour of the scheme when the branch was against it and went so far as appointing another Councilman in his place. At the Dublin Delegate Meeting in 1857, a majority were still in favour of the proposal but decided "not to enforce their opinion because to introduce a principle which required a great unanimity and good feeling to carry it out, into a Society among the members of which there existed a great difference of opinion was not the way to ensure its success."[40]

The issue still appeared on the agendas of the Council from time to time but never gained wholehearted support and action was continually postponed. The rosy picture of a "land studded with workshops belonging to the workers" painted by Newton was not to be.[41] By 1854 both the co-operative workshops in London had failed and the printing of the Society which had been placed with Isham of the Working Printers Association, a co-operative venture, had to be given to a private firm. Vansittart Neale pointed to one of the reasons for the failure of the co-operative idea among the engineers.

> "I do not know exactly why the men failed to make their society succeed but I do not think that many of the Amalgamated Engineers of that day had any faith in self employment as a means of permanently raising their position as workers."[42]

But the lack of enthusiasm on the part of the members was not the only reason for failure. The spirit of the workers was for fighting the masters by action in the workshops, backed by the new strength of the amalgamation, and not by competing with them in trade. In addition there was great confusion amongst the advocates of co-operative workshops. Some saw them as a temporary expedient for tiding over periods of difficulty whilst others looked upon them as a long-term policy and an end in themselves, not realising that the logical conclusion of their actions—a land studded with worker-controlled workshops—would have been a challenge to capitalist society which the engineers could not possibly have made successfully as an isolated section of the working class.

For a short time after the lock-out the Executive Council and *The Operative* favoured schemes of emigration, as a means of reducing the competition in the labour market—a policy which Ernest Jones described as cowardice. "Do the masters talk of emigrating? No! —they can stand their ground."[43] On July 26, *The Operative* reported that "a trusty band of glorious spirits . . . they would rather have remained in the land of their birth had not the right to labour been practically denied them and the honourable avenues to employment closed by Mr. Sidney Smith's declaration," were given a farewell dinner by Mr. Vansittart who lent them £1,030 for the purpose of emigrating to Australia, every penny of which was subsequently paid back. Twenty seven Society men together with their wives and children—totalling ninety four in all—sailed in the *Francis Walker* from Southampton. "The work of true civilisation at the Antipodes," said William Newton, "will owe much to our misfortunes of the present hour," a prophecy which was fulfilled in the shape of the formation of the Sydney branch, the first overseas branch of the Society.

The employers did not achieve the major aim of their lock-out, the destruction of the Society. The membership began to increase in July, after a heavy fall in the early months of 1852, and continued to do so steadily until at the beginning of 1855 it surpassed the highest figure reached prior to the lock-out, and its funds which were reduced to a mere £700 in April, 1852, accumulated even faster. The employers had scant success with their "Document." *The Operative* reported that in July, 1852, Messrs. Rennie of London had already ceased forcing ironmoulders to sign it, and actually agreed to dismiss those who had. And John Robinson, manager of the Atlas Works, Manchester, remarked that although every man employed there had been required to sign the declaration "very nearly every man in the place has by degrees joined the Union."[44]

The employers' organisations on the other hand disintegrated except for moribund local associations and were not revived until the 'seventies. In 1856 when Sidney Smith was giving evidence on the lock-out before a Parliamentary Committee he admitted that the employers' organisation no longer existed. In 1867 an association of employers had a nominal existence in Lancashire but an employer expressively remarked that "the only plan we adopt now is for each to fight his own battle on his own hook."[45]

The attempt to crush the A.S.E. out of existence had ended in a paper victory for the employers but it was their organisation that disappeared while the Society gained greater strength than ever. But

WILLIAM ALLAN

WILLIAM NEWTON

THE FOUNDERS OF THE ASE

Sidney Smith was not long unemployed. He "was professionally concerned in the cotton strike in Lancashire" in 1853 and was secretary of the Master Builders' Association in London in the 1859 building trades lock-out.

William Newton

In the years immediately following the amalgamation the activities of the Society were dominated by William Newton who had joined the "Old Mechanics" in 1840 at the age of eighteen and remained a member of the A.S.E. until his death in 1876. Newton was born in Congleton, Cheshire, into a family which had seen better days and at the age of fourteen, on the death of his father, he went to work at Kirk's Foundry, Etruria, Staffordshire, joining the Hanley branch of the Society six years later.

When he came to London to work at Robinson's he quickly became known among London branches and was elected to the 1843 Delegate Meeting at the age of only twenty one, continuing to represent London at the meetings of 1845, 1847 and 1848 and playing a leading part at the latter meetings and throughout the amalgamation discussions. Because of his prominent part in negotiating the amalgamation his influence grew with its achievement and to his writings in *The Operative,* his speeches throughout the country, and his persuasiveness as the host of the "Phœnix Tavern," Ratcliffe Cross, close to the head office then in Little Alie Street, can be attributed much of that sense of power and confidence in the Society that led up to the lock-out of 1852. He was undoubtedly the most sought-after member of the Executive Council on which he represented the East London branch. Provincial branches, when they needed a speaker, would always ask for Newton and when disputes occurred it was to Newton that branches turned for assistance. Frequently as a delegate from the Executive Council, and sometimes, in his own words, as "an irresponsible individual,"[46] Newton was present at the discussions on all important disputes in every part of the country. It was his resolutions which had led the way towards amalgamation and his which were accepted as the basis of the famous circular of November 24, 1851. Sidney Smith attributed the entire lock-out to "a Mr. Newton who went among them [the engineers] and propagated certain doctrines."[47]

To a certain extent Sidney Smith was right. For although Newton was shrewd and able at estimating the striking power of some demands and the danger of pressing others, and did not hesitate to argue against the majority if he thought they were misguided, he was largely responsible for the attempt to put into effect a militant trade policy without the necessary forethought and preparation. His own enthusiastic conviction, which bred the conviction among the members that no employer would oppose "this gigantic association" was shown, too late for remedial action, to be false. But it was an error of tactics rather than strategy. The defeat of the Chartists was near to causing disintegration among the working class and it was Newton, in a different way and on a different level, who helped restore the workers' faith in their own organisations. The rapid growth of the Society in the years following the lock-out was as much a tribute to the success of his methods as the defeat in 1852 was an example of their weakness.

He continued a member of the Executive Council for a few years, though his attendance was irregular, and it was on behalf of the Society rather than as a part of it that most of his activities were undertaken. He was always at the service of the Society for publicising or defending it and trade unionism. He was elected to give evidence before the Select Committee on Councils of Conciliation in 1856, and in 1860 and 1861 to represent the Society at the Annual Conference of the Social Science Association—a liberal and professional body—where his speech was reprinted as a pamphlet. In 1859 he made a spirited defence of trade unionism in reply to an anti-union tirade by Adam Black, M.P., and in 1860 "for the able manner in which he advocated the cause of the Amalgamated and all other Trade Societies,"[48] as well as for his previous services, he was presented with a Testimonial from the membership in the form of a silver goblet, 300 sovereigns, and an address on vellum. Thomas Hughes was selected by the Executive Council to present the Testimonial at a great dinner, and the tremendous response showed the esteem and affection in which Newton, "the brave heroic defender of the rights of labour," was held by the membership. In 1864 he was made chairman of the Delegate Meeting and, ten years later, though he had been "like a star apart"[49] from the Society, being involved in other work, he was recalled, to the immense pleasure of the delegates, to take the chair again at the Delegate Meeting of 1874.

The transition from the leading figure to "a star apart" was due not to differences of policy, but to necessity to earn a living in the first place and to the character of Newton in the second. In 1848, he was dismissed from his job as foreman at Robinson's for his activities on behalf of the "Old Mechanics" and became the landlord of the "Phœnix." But his new occupation not proving congenial he left it to become secretary of an insurance company in 1851. His connection with this company, the London County Life Insurance Company ("special terms for workingmen") did not last long and he took up journalism for a living. He edited *The Englishman* in 1853-54 and became editor and later proprietor in the 'sixties of *The East London Observer*, a prosperous local paper which he continued to edit until his death in 1876.

There was not scope for both Newton and Allan as full-time officials of the Society and in any case Newton's temperament was not suited to the routine steady work of building the organisation. As was shown time and time again, he was a clear thinker on the main lines of policy required for organising and developing the Society but he paid scant attention to detail. In September, 1852, he disappeared from the Executive under something of a cloud while an investigation was proceeding into a deficit of £707 13s. 0d. at the East London branch of which he was treasurer. The matter was not finally cleared up until 1855 when a sub-committee exonerated him "from any charge of dishonesty but believe there has been great negligence of duty on his part." In short, a brilliant orator and writer and dynamic propagandist but not an efficient branch or Society official.

Quite apart from these technical weaknesses Newton was eager to play a more direct role in political life than would have been possible as a Society representative. In July, 1852—after the lock-out—at the age of thirty he contested the Tower Hamlets seat for Parliament as an independent working-class candidate against both Liberal and Tory. He was the first trade unionist to stand for Parliament. The elected Liberals, Sir William Clay and C. S. Butler, received over 7,000 votes, and Newton got 1,095, but in view of the limited franchise which meant that the majority of those who enthusiastically supported him at the hustings were not entitled to vote, his performance was very creditable. The Fourteen Points of his election address showed both his working-class independence and foresight. Besides universal suffrage, Parliamentary reform and similar planks of the Chartists, he advocated "legalising associations for the purpose of trade and industry," amending the partnership laws "which fetter and restrict enterprise," universal education, State insurance against unemployment, and revision of the Patent Laws "so as to enable the poor inventor to secure for himself at small expense, the reward of his own ingenuity."[50]

Newton played a leading role in local government in East London. He was a member and subsequently chairman of the Stepney Vestry, and in 1862 became the representative of Mile End Old Town on the Metropolitan Board of Works. In 1866 his work was acknowledged by the presentation from his colleagues in local government of a cup worth £360 and 500 guineas.

In 1868 he again contested Tower Hamlets declaring to the electors that he stood by his political opinions of sixteen years previously. During the campaign he spoke in favour of legalising trade unions, of compulsory state education and of equalising the Poor Rate all over the country, making Poor Relief a right instead of a charity.

The election campaign was a stormy one. Newton entered the field in answer to a petition signed by over 7,000 people only three months before polling day when there were already three Liberals in the field. Since there were two seats in the constituency and a Tory candidate standing, he was accused of splitting the Liberal vote and was petitioned by the supporters of Beales, the Reform League candidate, to retire from the contest as he was unlikely to poll many votes. This he refused to do, after an attempt to get the Liberal candidates to submit themselves to a pre-election vote of the constituents had failed.

There was confusion among the working class, sections of which had to vote for the first time, as to which candidate they should support. Allan of the A.S.E., Applegarth of the Carpenters, Robson of the Shipwrights, and David Guile of the Ironfounders supported Newton, but George Potter in an editorial in *The Beehive* suggested that these trade unionists did not know of the circumstances when they sponsored him, for had they done so they would have "spurned his candidature." Earlier *The Beehive* had written:

> "Mr. Newton once belonged to the working class and was intimately connected with the Society of Amalgamated Engineers but latterly seems to have 'outgrown' these professional pursuits, has become a successful local politician and is a member of the Board of Works, a body which may deserve better of the public than the 'public' seem to suppose. He is a man of thoroughly liberal politics."[51]

On polling days crowds of young men gathered on Clerkenwell Green where the booths had been set up and pelted every person who wanted to go inside with soot, red ochre and flour. Even the candidates were not immune from attack and *The East London Observer* reports that stinking herrings on sticks were waved under the nose of Mr. Coope, the Conservative candidate, "a practical reminder that he was once unseated for Yarmouth."[52]

When the votes were counted it was found that the division in the Radical camp had not let the Tory in although the voting was very close. Newton polled 2,890 votes, more than double his poll in 1852, but he was a long way behind the successful candidates with 9,839 and 7,849 votes respectively. In 1875 Newton made another bid at a by-election in Ipswich. This time, in a straight fight, *The Beehive* vigorously supported him and he just failed to unseat the Tory member by a narrow margin of 600 votes.

As a man who was keenly interested and active in trying to make the trade unions take a wider view of their functions and break down their narrow trade outlook, Newton was naturally one of the original members of the Labour Representation League formed by trade unionists in 1869 to further the interests of labour in Parliament.

It may be a matter of regret that ways were not found to harness Newton's great ability to the Society in the years following the lock-out and that much of his restless energy was spent in other fields, but in spite of his relative success in public life he remained true and spirited in his belief in trade unionism. In a circular issued by the Society at the time of his death this tribute was paid—

> "On the platform, in the press . . . he stood unfalteringly as the advocate and upholder of unionism when most of its friends were merely apologists."

He died at the age of 54 on March 9, 1876 and the Metropolitan Board of Works honoured him with a public funeral. It was attended by officials of the Society and many of his fellow members who wished to pay a last tribute to the man whom John Burnett described as "one of the fathers of the Society . . . one of the greatest of its founders."[53]

PART TWO: 1852-1892

THE AMALGAMATED SOCIETY OF ENGINEERS IN THE WORKSHOP OF THE WORLD

INTRODUCTION

The Industry, The Tools and the Engineer: 1852-1892

The Industry

In 1847 a handful of men met together in Birmingham to found the Institution of Mechanical Engineers and to elect George Stephenson as their first President. Four years later the Amalgamated Society of Engineers was officially established and, in the same year, the Great Exhibition, displaying to the world the achievements in British engineering, was opened at the Crystal Palace in Hyde Park. These events reflected the growing maturity of engineering in Britain. The danger that the industry might become the obstacle to reaping the full harvest of the Industrial Revolution had been overcome by the inventions and new processes of the previous fifty years. The engineers had successfully matched in their own industry the revolutionary changes they had assisted to fruition in others. Production of machines by machines was now possible ; it remained to utilise and exploit to the full the new foundations of the industry. Technicians, workers and employers recognised the far-reaching effects of the changes made and were aware of the possibilities of the future.

The tremendous expansion in industry in the following twenty five years, a period known as the Golden Age of British Capitalism, and the less rapid, though none the less solid expansion in the succeeding years made heavy calls on the young engineering industry. Directly and indirectly the engineers played a key role in the improvements of communications, particularly in railways and steamships, which had widened both the home and foreign markets, and in making the prime movers and variety of machines which made Britain "the workshop of the world." The translation of raw materials—coal, cotton, iron, steel and wool—into railways, steamships, machines and "shirts to clothe the backs of millions" depended upon the ability of the engineering industry to meet the demands and keep abreast of the changes both in material and demand.

It is not possible to illustrate with any degree of accuracy or completeness the growth in the engineering industry in this period. In 1841 there were 31,566 persons engaged in the manufacture of engines and machines and similar trades, described by the Census of Population as "this most important branch comprehending the most intelligent and best paid of persons, both of masters and handicraftsmen."[1] The next fifty years showed a steady increase, so that by 1891 over a quarter of a million men were engaged in machine-making and shipbuilding.

The growth in the export of machinery also gives an indication of the increase in both the absolute and relative importance of the industry.

In 1850, exports of machinery were valued at just over £1 million and by 1875 were over £9 million, topping the £15 million mark in 1891. Fluctuations in prices prevent a very accurate picture, but the expansion is clear. The relative importance of machinery exports had risen from 1 per cent. of the total value of exports in 1850 to 4 per cent. in 1875 and 6 per cent. in 1891.

The products of the industry grew in number and complexity. In 1850 the three main products of the industry were textile machinery, locomotives and steam engines. Now marine engineering, the manufacture of armaments and to a lesser extent agricultural machinery, mining machinery and machine tools began to assume importance, and by 1890 cycle manufacture and electrical engineering products were large enough to be distinguished as sections of the industry.

With the advancement in science, particularly in the study of thermodynamics[2] and in the practice of metallurgy, and with improvements in methods of construction, great strides were made in the power, strength and efficiency of the machine and engine-making branches of the industry. The locomotives and machines of the 'thirties and 'forties were relegated to museums or the scrap-heap, to be replaced by engines of greater speed and power, and machines of greater complexity and capacity.

But these were changes of degree. In marine engineering, almost non-existent in 1850, a revolutionary change took place. The introduction of steam in the place of sail as the method of propulsion and the replacement of wood by iron, and later by steel, as the material of construction, transformed the industry. The transformation gave birth to the marine engineering industry and the subsequent developments in materials and methods of construction, calling for engines of increased power and speed, economical in space and fuel, necessitated rapid changes in the young industry. Compound, triple and quadruple engines succeeded each other, varied boilers of the water-tube and other steam-saving types appeared and the number of fitments and installations on board, such as ship's valves, pumps and water-tight doors which called for engineers' skill, mounted with every new ship. An illustration of the rapidity with which these changes developed was the change-over from wood to steel in shipbuilding. In 1850 most of the ships were made from wood—only 9 per cent. were of iron—but by 1880 the position was reversed and only 4 per cent. of the new tonnage built was of wood. In the next twenty years iron itself was supplanted by steel and the tonnage built from iron reduced to nil.[3] Britain was leading the world. Competitors in wood and sail were left far behind and so great was the supremacy that in 1892 over 80 per cent. of the merchant tonnage built in the world was constructed in British yards.

The developments in firearms and in the use of rifling on cannons, in which Whitworth played a leading part, and the use of steel as armour-plating tied engineering even more closely to the armaments industry. In this new science of war, as in most other branches of engineering, Britain led the world and the large increase in armaments throughout the world in the second half of the nineteenth century brought many orders to the British engineering industry. In addition to the weapons produced in Government and private arsenals and dockyards for the home forces, armaments figured prominently among exports and the progress of foreign wars affected the prosperity of the engineering trades.

Specialisation and Limited Liability

The growth of the engineering industry, both in the numbers employed and in the variety and complexity of the products, was accompanied by a greater degree of specialisation by individual firms and by an increase in their size. The leading engineering shops of the 'forties and 'fifties were general shops. They prided themselves on their self-sufficiency and could turn their hands to a large variety of mechanical and civil engineering products. William Fairbairn of Manchester undertook millwork, machinery and locomotives ; George Stephenson of Newcastle, known usually as a maker of locomotives, also made iron bridges and undertook marine and dock work ; R. W. Hawthorne, also of Newcastle, made cranes, steam engines, locomotives, marine engines and pumps ; and Armstrong's famous Elswick works, started in 1847, turned out millwork, hydraulic equipment, lock gates, iron bridges and cranes as well as armaments and some marine engineering. Other prominent shops of the 'fifties and 'sixties—Kitsons and Fenton Murray of Leeds, Sharp Stewart, and Beyer of Manchester, Napiers, Penn and Maudslay Sons and Field of London—similarly covered a wide range of products. Firms such as Messrs. Hibbert and Platt of Oldham, or Dobson and Barlow of Bolton, with their enormous works specialising in textile machinery, though they made nearly all their special machine-tools themselves, and Whitworths of Manchester, and Nasmyths of Patricroft, specialising largely in machine tools, were exceptions rather than the rule. In 1874 the President of the Institution of Mechanical Engineers was noting a change. " . . . Within the last few years," he said, "the business of mechanical engineering has divided itself into distinct branches so that the locomotive builder is little more than a locomotive builder."[4]

By the 'nineties these trends were established. The leading firms had become identified with different sections of the industry and overlapping into other branches was becoming relatively uncommon. But while the general self-sufficiency had passed away, with the exception of newer industries such as small arms, sewing machines and cycles, the interests of the firms within the sections remained wide.

The number of small-sized firms had also increased. They had progressed from the handicraft stage of the 'fifties to a machine stage, usually by way of purchases in the second-hand market, but they remained small. They were located everywhere. No town of any size was without at least one firm dignified by the term "Engineers" and they continued to be the fertile soil from which larger establishments sprang. It is impossible to describe them either as "jobbing" or specialised. Some undertook every kind of work that could pass through the doors. Others, more especially in the larger engineering centres, specialised in accessories for machines, such as nuts and bolts, spindles and flyers and rollers, others on household utensils and equipment, and the small brass-working shops in the Midlands could produce anything made in that increasingly useful material. At no time did the workers in these small shops outnumber those employed in the larger units, nor did they counteract the general trend towards increase in size and specialisation, but they constituted an important feature of the industry, and greatly affected the problems of organisation and unification of both employers and workers.

Among the larger firms, the increase in the size and value of the product, the increased use of machinery and the longer production cycle from raw materials to finished product, entailed a change in methods of finance. The partnership system had provided sufficient capital for the industry to surmount the technical difficulties attending its birth and growth to manhood, but, in spite of the very large profits made, the private means of the proprietor alone were insufficient for continued expansion. The passing of the Limited Liability Acts in 1856 and 1862, allowing individuals to invest money in a concern without the danger, in the event of a firm's failure, of being called upon to pay out to the full extent of their private resources, cleared the way for the entry of further capital into the engineering industry. Whitworth's, Tangye's, Platt's, Vulcan Locomotive Works and Palmer Brothers were among many who went "limited" in the 'sixties. Many more followed in the 'seventies and the burst of promotions between 1880 and 1890 saw further conversions to limited liability, though not all applied immediately for extra capital. In a number of cases no issue of shares was made and the conversion was solely a matter of convenience due to one or other of the partners retiring, but the basis for obtaining extra capital was laid. By 1890 a majority of the leading engineering firms had adopted the limited form of organisation, while the myriads of small firms were still on a basis of partner or personal ownership.

A further development in the industry, partly dependent on the growth of specialisation and partly on the position of British engineering in the world market, was the changed nature of competition within the industry. In the 'fifties, with the firms producing much the same range of products and with Britain and the world as their unchallenged market, competition tended to be "Bolton against Glasgow" and "Newcastle against London." While a degree of unity could be achieved among them to discuss technical questions at the Institution of Mechanical Engineers, there was little or no community of interest on trade questions. Unity against the workpeople and the unions was painfully achieved in some cases but was of short duration. The individual or partnership control in the industry encouraged an "every man for himself" outlook. The growth of foreign competition in world markets in the 'eighties, the extension of limited liability and the passing from general to specialised engineering made for unification, particularly in relations with the workpeople and trade unions. Firms making the same type of product, for example locomotives, although competitors amongst themselves, all employed the same type of labour and in foreign trade were facing the same rivals. Unity against the demands of the workpeople developed, usually behind the cry of "foreign competition" and with it local employers' associations appeared which proved to be of a permanent nature.

Prosperity and depression in the industry followed the fluctuations in the general economic life of the country. At certain periods the trend was more exaggerated in engineering. For example, the Civil War in America which had such a disastrous effect on the British cotton industry, led to heavy unemployment among textile machine builders. Again, the Franco-Prussian War of 1870-1871 was followed by a particularly prosperous period for engineering compared with other industries due in part to the expenditure by Germany of her war indemnities on British capital goods. The so-called "Great Depression" which extended, with fluctuations, from the middle 'seventies to the middle 'nineties was felt most heavily in engineering in 1878-1879. This depression roughly marked in engineering, as in the economic life of the whole country, a watershed between an unfettered expansion and an expansion hedged-in by foreign rivals and competitors and directed towards imperialism. For the workers, the watershed meant that the phrase "the unemployed" came widely into use for the first time and the increasing insecurity amid greater productivity and wealth led to new ideas as to the policies and purpose of working-class organisations. The increase in insecurity was greater among workers in the iron and steel, engineering and shipbuilding than among all classes of workers. Between 1860 and 1870, unemployment in these trades ran 16 per cent. above the overall figures but between 1880 and 1890 the gap had increased to 26 per cent.[5] The average number of members of the Society unemployed was not as high as that for all metal trades but the same trend was shown, increasing rather than decreasing with the development of the industry.

Few Changes in the Tools

The spread of the processes and methods invented in the first half of the century rather than the development of new methods was a main characteristic of the years between 1850 and 1890. The fitter and turner in an up-to-date shop of 1850 would have been quite at home in a shop of the 1890's as described by one who served his time there at the latter date:

> " . . . Lathes, planing, shaping, slotting and drilling machines were the whole of the equipment. Brass valves, etc., were machined by hand in a gearless lathe. Carbon steel tools alone were available and flat and forged drills. Cast irons were used exclusively for castings . . . Yorkshire or Lowmoor iron or Bessemer steel was used for spindles. Our power was obtained . . . . from a 30 ft. Lancashire boiler."[6]

There were no major inventions in engineering technique. Changes lay in the greater number of machines installed, refinements and improvements in their structure and capacity and the extent to which the methods pioneered by the large establishments had penetrated into the smallest jobbing shop.

The lathe and the planer remained the chief tools in every shop. But in addition to Maudslay's "Go-cart" or engine-lathe, there was, for example, the "duplex" lathe with a back toolpost, a gap lathe for swinging heavy castings, a double railway wheel lathe, and a lathe with a traversing cross-slide. The planer had been improved in strength and adaptability. In the place of the three-ton planer of the 1840's there stood the sixty-ton planer of the 1890's[7] for heavy work while a smaller and more readily handled planer, with the time-saving refinement of a quick return stroke had taken its place on lighter jobs. The second line tools, the shapers, slotters and drillers of the 'fifties had likewise been joined or in the most advanced shops replaced by stronger and more accurate models.

The stationary horizontal steam engine remained the source of power for driving the machines. Increased power and steam pressure had been developed with the compound engine, the general change-over from the small "Cornish" boiler to the "Lancashire" boiler, and the replacement of wrought iron by mild steel for boiler plates, but the principle of the drive and the methods of driving belts, shafting and countershafting, remained the same. The electrical dynamo made its appearance in a few shops but it was used only for lighting.

Whitworth's insistence on accurate measurement spread from the leading shops to become general practice but with the exception of certain specialised trades the principles of measurement as an aid to production remained in its infancy. In addition to the standard Whitworth thread system and the production of true plane surfaces, Whitworth later developed a system of standard gauges. These gauges were to size, plug and ring, and it was this approach, accurate size, rather than the "go and not go" tolerances essential to mass production, that continued to mark the methods of measurement in this period. The exceptions were trades such as cotton-spindle grinding and to a lesser extent, boss boring and axle turning for locomotive wheels. The micrometer in its modern form was exhibited at the Paris exhibition of 1867 and known as the "Systeme Palmer." Messrs. Brown and Sharp of Connecticut, U.S.A., began commercial production but general use of micrometers developed slowly in Britain. "A fine 64th" aided by skilled experience remained the finest limit of ordinary practice.

While the changes in tools, power and measurement were relatively small, the development of new materials had a marked effect on the scope of engineering, increased the size and variety of the product, and directly affected the trades closest to the raw materials in the production cycle. Addressing the Institution of Mechanical Engineers in 1856, Joseph Whitworth said, "What we want is iron of great strength, free from flaw, seams and hard places." Henry Bessemer the same year was reading a paper before the British Association giving promise of such a material. By the 'seventies steel was in general production and further inventions of alternative processes by Gilchrist and Thomas and the Siemens Brothers led to the wide replacement of iron by steel. Parallel improvements in the steam hammer and the introduction of the hydraulic press improved the quality of the castings and forgings and made possible a much greater range in the size of work produced.

The effect of the spread of advanced practice from the few to the many, the increase in the variety of types of the main machine-tools, the greater use of tools in the foundry and the growing complexity of the product, made for important changes in factory organisation and relations between the different trades. Separate shops for the various operations replaced the general shop in both large and small factories. The turnery or machine shop, the fitting and erecting shop, the patternmakers' shop, the smithy and press shop developed as separate units under the same roof.

Of equal significance was the differentiation in trades. In 1867 William Allan could say " . . . Some twenty years ago when we had not so many machines introduced . . . . men were considered to be better general workmen and could do, and did, different things where now they are confined to one or two branches."[8]

Five types of lathe instead of one general engine-lathe called for a turner with specialised experience rather than for a general workman. Larger and more complicated castings and foundings in different metals called for experienced patternmakers, hammermen and foundry workers rather than for good carpenters, millwrights or general blacksmiths. Particularly marked was the specialisation of the fitter. Until the middle of the century, fitter and filer were interchangeable words, the latter being in most general use. The advances in the capacity of machines and the developments in materials and in the intricacies and physical size of the product which took place without a comparable improvement in accuracy of machining and measurement in general work, placed increasing responsibility on the fitter. Working to the component and not to drawing, no tolerances, no grinding but with tapered or oval units, the fitter was called upon to make a dead fit and a lasting fit, the world renowned feature of British engineering products. With little chipping, but with a variety of files, scrapers, taps, dies and chasers that would have surprised his forbears, he wangled, invented, coaxed and hammered and only rarely "bodged" the job.

More than quarter of a century after the Great Exhibition of 1851 a keen observer could remark "no very striking change has taken place in design nor in the principles which govern the construction of ordinary machine-tools"[9] and the planes, scrapers and calipers of the patternmaker, fitter or turner working at Sharp Stewart's or Stephenson's in 1850 were quite adequate in the general shop in 1890. In some advanced shops, however, there was evidence of an important change in engineering technique. "Mushet" steel for turning tools, milling machines, capstan and turret lathes, production grinding with emery instead of grit wheels were some of the experiments being made. Mainly of American origin they were already proving by the 'nineties a great asset in some types of work but their use was still confined to the more adventurous employers.

The similarity in the technical methods in this period is matched by a similarity in those problems confronting the Society which arose from the relationship between the worker and his tools. The preliminary battles in the 'forties and 'fifties against those employers who desired to use the "revolution in tools" to abolish the apprenticeship system and so lower wages, were won by the Society, partly because of their amalgamated strength but mainly because of the demand for skilled specialised craftsmen and tools to match the increasing demand for products of greater intricacy and complexity. Similarly the general introduction of piece-work on a basis acceptable to employer and workman was limited by the individuality which continued to mark most of the operations and the finished job.

The increased differentiation between trades and the increase in their number presented the Society with an old problem in new clothes. From the 'seventies onwards this differentiation laid the basis for a trend away from amalgamation towards sectional societies and though the growth in the unit of production operated in the contrary direction, the adaptability of the new amalgamated Society was put to a severe test.

The Engineer: The Society Member

On the skill and ability of the engineering worker to make and use the tools of the trade the character of the industry was built. On him depended the growth of the industry, the extension in the use and scope of the machines, and the changes in method. Similarly it was on his loyalty to his workmates and his willingness to combine with them for mutual protection that the success of his Society depended. Who was the engineer, the Society member, in these years? How did he work and live?

The practice of the eldest son of a journeyman following the same trade as his father existed from the earliest days of engineering. With the expansion of the industry the supply of eldest sons did not meet the demand for engineers and second and third sons, and sons of fathers out of the trade joined the ranks, but entry to the industry and the Society was still by five or seven years' apprenticeship.

After spending four years or more as the general runner-boy in the shop or around the cotton mills, the young engineer was apprenticed when he was between fourteen and sixteen years of age. His indentures had changed very little from the days of the eighteenth century millwright. The apprentice was to:

> "serve his said Master faithfully, his secrets keep and lawful commands gladly obey and perform. He shall do no damage to his said Master nor see any done by others but to the utmost of his power shall prevent or forthwith give notice to his said Master of the same. The Goods of his said Master he shall not waste nor lend them unlawfully to any. Hurt to his said Master he shall not do or cause or procure to be done. Taverns, Inns or Alehouses he shall not

frequent. At cards, dice tables or any other unlawful games he shall not play."[10]

His wages for such service were to be 2*s.* 6*d.* for the first year rising by annual instalments to 15*s.* for the sixth and last year of his apprenticeship.[11]

If he wished to join the Society the young engineer, in addition to serving his time at one of the skilled trades, had to show himself a sober and efficient workman, able to earn the normal rate for his job, be proposed and seconded by existing members and be free from any physical defects likely to affect his ability as a workman. For example, men who were forced to wear glasses were not allowed to join and the Bridgewater Branch felt it necessary to consult the Executive Council before admitting a "worker who is a little round shouldered." Strict attention to the health, skill and character of prospective members was essential once the members had decided that their Society should provide benfits in time of sickness, unemployment and old age on a scale and to numbers not equalled by any previous Society. Backed by experience, the Society was later able to relax the conditions of entry and to increase the benefits ; but the principles remained.

If a young man successfully passed the tests for membership, he was entitled to hold a card which was described as the best passport all over the world for a tradesman.[12] The overwhelming majority of young men just out of their time who joined the Society were fitters and turners, with the former outnumbering the latter by two to one as the following table covering three five-year periods shows :—

Percentage of Total Admissions[13]

Years	Fitters	Turners	Smiths	Pattern Makers	Mill-wrights	Other Trades
1865–9 ..	54	24	10	4.5	4	3.5
1875–9 ..	57	25	9	4.1	3	1.9
1885–9 ..	58	27	7	3	1	4

The average age on joining of fitters and turners was 24½ years, and similar in other trades, with the exception of smiths, who were older, averaging 26½ years, and planers, borers and slotters who were usually unapprenticed but allowed to join the Society if they had served five or seven years at their trade.

This general stability of the trades of the engineers joining the Society in these years is a rough reflection of the stability of the methods used in the industry. Fitters remained the most numerous class of skilled workers in spite of the increase in the use of machinery, and apprenticeship remained the necessary normal qualification for handling the tools in spite of the employers' dreams of "labourers" performing miracles with the new "self-acting go-carts" and planers. But the tendency for fitters to increase as a proportion of the total admissions was more a reflection of recruiting by sectional societies, which catered for crafts other than fitters and turners, than of the increase in the absolute number of fitters and turners employed.

Unemployment and Travel

The emphasis on skill and character enabled the Society, in the absence of any other machinery, to assist the members when they were out of work, with the confidence that their ability would ensure that they were among the first to obtain employment when trade revived. When a member became unemployed he was entitled to donation benefit which, as the Society grew in strength and financial ability, increased in amount.

In a serious depression of trade, the 10 shillings a week donation benefit was hardly sufficient to keep the members and their families, but apart from drawing on savings every member also had the right to apply through his branch to the Executive Council for a Benevolent Grant. These grants were paid from a fund raised by levy on all members following a vote and it was a proud record that on no occasion did the membership refuse to agree to levy themselves to assist their brothers in distress. Between 1850 and 1890 the members levied themselves over 70 times for this purpose. An old member could say with feeling "Many whose wives would otherwise have been paupers and whose children would have had their hair cropped in a workhouse, have been saved from that sad necessity" by the Society's benefits.[14]

Benefits to the unemployed member were only one aspect of the Society's policy in dealing with unemployment. Apart from the trade policy to restrict overtime and entry into the trade in the hope of increasing the number of jobs, in practice and rule the Society acted as an employment agency for its members. All vacancies in a town or district were notified to the branch secretary so that he could direct the out-of-work members. The high skill of the membership led in numerous cases to their promotion to foremen with the right to hire, and where possible such a foreman took on Society members. When employment in one town was not available members were encouraged to go "on travel." The elaborate *Monthly Report* listed the state of trade in every branch and secretaries could advise unemployed members when and where to travel. Travelling cards were issued enabling the member to draw his donation away from his own branch and the local secretary welcomed the travelling member and made arrangements for his lodging, usually at the Clubhouse where the branch met. In the event of a definite vacancy being notified to the Society in any part of the country, the branch secretary who had a member of the trade required signing the Vacant Book, on being instructed by the General Secretary, sent the member to the situation and paid his railway fare.

Sometimes members visited many towns before they found work. In 1865, James Alexander of the Hull 2nd branch visited Burton-on-Trent, Bury, Chester, Chowlem, Derby, Leigh, Macclesfield, Gorton, Rugeley and Stoke-on-Trent before he finally got a job. Occasionally the travel facilities were abused. For instance, the secretary of the Halifax branch paid donation to Cornelius Bamford on presentation of his travelling card. Later passing the local Music Hall he noticed a bill advertising Corney Hampin, the negro comedian and stump orator who was appearing with his partner Annie Bamford, the Lancashire dialect vocalist. It turned out to be his fellow member and the Executive Council ruled that Cornelius should return the donation as they considered he could not be looking for a job whilst he was performing on the Halls.[15] But as a rule the members left home only in earnest search of work and not for a jaunt. It was generally the younger members who took advantage of the travel facilities which played a not insignificant part in promoting the mobility of labour necessary for the even development of the industry.

While the size of the industry made possible fairly accurate knowledge of the conditions and opening for employment, careful teamwork by the Head Office and the Branch secretary enabled the Society member to travel with the hope of early employment. Between 1865 and 1874, 13,400 travel cards were issued by the Society and an average of 35 per cent. of the members unemployed were on travel in search of employment. But a larger membership, differentiation in trades and the increasing tendency of a slump in one part of the industry to affect the others, weakened the role the Society could play in obtaining jobs for members in their own towns and through travel. Between 1880 and 1890 the percentage of unemployed members going on travel had dropped to 18. Complaints were frequent in the 'eighties, that the Society was not as active in placing members as were the smaller sectional societies. Foreman members in a town with four or five branches and over a thousand members could not know the individual turners, fitters and pattern makers so intimately as when there was only one branch with 200 members. The members attempted to overcome this by forming Mutual Aid Clubs within the Society. Patternmakers' and Smiths' Mutual Aid Clubs were formed in all the large towns between 1865 to 1895, with the specific aim of getting to know one another and notifying all vacancies in their trade immediately they occurred. The Society even went as far as making it a rule that no member should notify a non-member of a vacancy, but the effective fulfilment of its aim was weakened by the regular and widening effects of slumps in the industry.

But the engineers did not only "travel" at home. Skilled British workmen were in demand throughout the world and with the membership card of the Society as proof of their bona-fides, members, particularly the young ones, in search of a job or of adventure travelled to all parts of the globe. When the work abroad was fairly permanent, the members banded together and formed branches of the Society to obtain the benefits and assist others coming out on travel. The first of these overseas branches was formed in Sydney in 1853, followed by one in Montreal in the same year. Other branches were started in Croix, France, Constantinople, Bombay and Malta but the biggest growth was in the United States of America. The first American branch was formed in Buffalo, New York State in 1861, and within ten years there were over 20 branches in that country. The names of the branches are a page from the industrial history of America. Bloomington and Chicago in Illinois, Cleveland in Ohio, Detroit in Michigan, Newark in New

Jersey, New York, Philadelphia and Pittsburgh in Pennsylvania, Providence in Rhode Island were a few of the cities where the British engineers formed their Clubs. Twenty years later in 1892 there were 82 branches overseas with a membership of over 5,000, one half of which was in Australia and New Zealand which had replaced the U.S.A. as the chief attraction to emigrants. At the same time the permanence of the branches and some recruiting of Australian and American workmen, developments unforseen in the 'sixties, were raising difficult problems of control and autonomy.

Wages and Hours of Work

The wages of the Society member, when in work, continued to vary from district to district. The general wage rate was upward, but local differentials remained and to these were added, with the greater specialisation in trade, differentials between occupations.

In the 'fifties, London, and to a lesser extent Manchester, operated some sort of district rate. A fitter in London was paid 34*s*. a week and in Manchester approximately 30*s*., but in Newcastle the average was only 24*s*. to 25*s*. By 1890 no fitter could start in London under 38*s*. The Manchester rate had fluctuated more widely and had reached 34*s*. in the latter year. In three other important centres an operative district rate was not established until the 1870's, and in 1875 in Glasgow, Newcastle and Birmingham a fitter had to work for 27*s*., 31*s*. and 32*s*. respectively. By 1890 these rates had risen to 30*s*., 34*s*. and 34*s*.[16] In some of the smaller centres the rise had been more marked. The starting rate in Dundee for example rose from 20*s*. in some shops in 1851 to 30*s*. in all shops in 1890. In South Wales, except in Cardiff where a rate of 36*s*. was paid, little progress had been made ; Tredegar employers were only paying 22*s*. to 23*s*. a week in 1879 and in 1890 a first-class mechanic got as low as 21*s*. in Ebbw Vale.

The growth of differential rates for the individual trades was most marked in the case of patternmakers. In Manchester between 1850 and 1860 rates for patternmakers were identical with those for fitters and turners. By 1875-1880 a patternmaker was getting between 1*s*. to 2*s*. a week more than the fitters and in 1888-1893 the difference was approximately 3*s*. to 4*s*. After 1875 the rate for a smith showed the same tendency to rise faster than that of a fitter and by 1890 he was receiving 1*s*. to 2*s*. a week more.[17] Foremen and chargemen were paid on the same rate or just above the skilled patternmakers and smiths.

Increases in money wages were accompanied by a decrease in the number of hours of the normal working week and the insistence on extra payment for overtime. Between 1850 and 1871 engineers worked 60 hours a week in the majority of important centres except London and the leading shops of Manchester where a 57-8 or 58½-hour week was in force. The working day started at 6 a.m. with half an hour break for breakfast at 8 o'clock, one hour for dinner and a further half hour for tea, and knocking off time was 6 or 7 p.m. When overtime was worked the men continued to 8 or 10 p.m. By 1890 the 54-hour week, starting at 6 a.m. with Saturday afternoon off was universally accepted as the standard, although a few shops were experimenting with the 48-hour week. A higher rate of payment for overtime, though varying in amount from district to district, was as widely enforced as the standard 54-hour week and it was based in most areas on the principle that each day stands by itself.

Money wages per hour were thus increased both by straight increases and by the reduction in the hours of work. An engineer's real wages—his purchasing power—also rose. The cost of living fluctuated between 1850 and 1875 and the rise that did take place was less than the rise in money wages. Between 1875 and 1890 there was an almost continuous drop in the prices of retail goods, so that the stability of wages or the slight increases gained in these years meant a rise in real wages. This picture of progress in the standard of living of the skilled engineer applied only to those in full employment. Short-time working in some sections of the industry, and unemployment offset some of the increases in wage rates.

Most of the engineers were paid on a day-work basis and got their money at the end of the week, but in Scotland the fortnightly pay day was the vogue with the humiliating system of "subs" on the "blind" Saturday.

Payment by Results

Piece-work was only possible where there was a degree of repetition in the work done and this only existed in certain types of textile machine-making, locomotive building and manufacture of small arms, sewing machines and cycles. On the N.E. Coast and in Scottish centres of marine engineering and in London, with its mixed general engineering, piece-work was almost unknown. On the other hand in Manchester and Lancashire generally it was already a practice in 1850 and strenuous efforts were made by the employers to extend its operation.

The system of piece-work varied considerably from shop to shop and job to job, but there were two main types in existence. The "gang" system was operated on large jobs, such as locomotive construction or the making of a complete textile machine, and in these cases it was usual for the employer to "sub-contract" the job at a certain figure to a piece-master, charge-man, or taskmaster. The piece-master would then employ the men to do the job, who would be paid day-rate wages while the work was in progress. When the job was finished these wages were deducted from the price of the job and the surplus, if any, was divided among the men according to skill and hours put in. This division was entirely in the hands of the piece-master "always more grasping, more sordid, more tyrannical than the real employers."[18] Under this system the workers had not only to pay the wages of the piece-master but were completely at his mercy for the division of the surplus. Some piece-masters became experts at robbery;

> "they were in the habit of engaging men for about six weeks and then discharging them in order to avoid sharing the piece-money

with them . . . and men were discharged if they made any enquiry about the piece-money."[19]

Others employed skilled men to build the first one of a series of machines and dismissed them once the method of working was established, and employed boys in order to leave for themselves a greater surplus on the remainder of the contract.

In the better shops where the influence of the Society was strong the men were paid through the office and the piece-master's function reduced to seeing that the job was efficiently done, but he still claimed five to ten per cent. of the surplus for management fee plus his ordinary share.

The second type was straight piece-work which sometimes existed within the gang system but usually directly between the employer and the worker. The price was fixed on the performance of the best and strongest worker and "he as well as the less skilful man is only allowed to make a certain percentage above his own time wages. If the skilful man takes more than this percentage . . . down comes the price of the article."[20]

In very few cases did the worker have any say in the fixing of the price. The percentage bonus over the time rates which the price was supposed to yield the operator varied from shop to shop and in times of depression the managements had no hesitation in cutting the piece-work prices without notice, even when the workers had not earned above the fixed percentage.

Under both methods of piece-work the debt system was in operation. If a worker did not make his time rate through lack of knowledge of the price or because of the insufficiency of the surplus when the job was finished, the debt was carried over to the next job. Often when a worker left, his successor would be saddled with a debt to clear off before he could start earning.[21]

The methods of piece-work payment which the employers introduced and attempted to extend in this period were a mixture of entirely new systems and systems copied from other trades. The industry was not well adapted to piece-work and examples of successful operation in other trades had little bearing on the very changeable engineering industry.

Before its operation could be widespread or successful, new technical methods and a new approach by the employers which would give full safeguards to the workers was necessary. At the Wages Census in 1886 of the 10,427 fitters, turners, patternmakers and smiths covered by the returns for engineering, only 754, or just over 7 per cent. were on piece-work. Smiths showed the highest and patternmakers the lowest proportion on piece-work, and of the fitters and turners approximately 6 per cent. were working the system.[22] The earnings of the fitter and turner on piece-work exceeded those of the same trades on time-work by between four and five shillings a week, or one penny an hour ; not a great incentive for the engineer to forgo the tradition of a lifetime and to risk the many snares and pitfalls surrounding the piece-work systems.

Working Conditions

The conditions of work in the engineering shops showed no marked improvement in these years. Emphatic and decisive action by the Society had prevented the beloved managerial system of maintaining discipline by fines from spreading, but attempts to introduce them were continuously made and, if anything, became more elaborate.

In Leeds in 1850 a worker on the before-breakfast shift was resting his head on his hand, his elbow on the lathe bed, his eyes glued to the traverse. The manager saw him but said nothing. When the man went to breakfast he saw his name on a piece of paper in a glass case stating that he had been fined one shilling for "skulking."[23] In 1879 the Barrow Shipbuilding and Iron Company introduced rules that no worker might use the convenience more than once a day and then for not more than seven minutes. The time-check had to be handed to the time-keeper on the way to the convenience and any excess of time or visits was punished by a shilling fine.[24] The thirty years between these two events marked a step but hardly in a progressive direction. The Barrow men struck work and the rules were withdrawn, though from an account of some factory closets at the end of the century it would appear that the fight was mainly on principle.

> "The convenience consists of a long double row of seats situate back to back, partly divided by brick walls, the whole constructed above a large pit that contains a foot of water . . . the seats themselves are merely an iron rail built upon brickwork and there is no protection. Several times I have known men overbalance and fall into the pit. Everything is bold, daring and unnatural. On entering, the natural persons of the men sitting may be plainly seen and the stench is overpowering."[25]

The extension of the Factory Acts in 1867 and 1878 to cover all workshops with power-driven machinery led to the inspection of some engineering shops, but the standard was too low and the inspectors too few to effect much improvement. Of more consequence was the Employers' Liability Act of 1880, the first step towards an effective system of workmen's compensation for injuries at work, although the obligation of the workers to prove negligence led to the comment that the Act "will not much benefit our members."[26] That the cause of the frequent accidents was negligence, the members had few doubts. Engineering was not one of the "dangerous" trades and the bad lay-out and conditions of the shops led to more accidents than the processes used or materials handled. The absence of applied study of stresses and strains or of the strength of the materials used for shaftings and pulleys caused a number of accidents. But the lack of elementary guards and the semi-darkness of the average shop which became more and more cluttered with scrap, castings and tools, which though useless and out of date few employers could be persuaded to clear away, caused the majority. Some improvement came in the 'eighties with electric lighting and campaigns for whitewashing walls but only the most advanced shops saw the economy of such methods.

The Engineer's Spare Time and his Home

The length of the working day left the engineer with little opportunity or energy for spare time activities. Some of his hours outside the workshop were spent in the public-house drinking with his mates. He often went there for friendly company and to forget the dirty factory and the drab living conditions, but sometimes he was driven there by the strain of long hours. William Newton pointed out to a Select Committee of the House of Commons, when asked whether long hours led to the use of stimulants, that "if a man goes to work at four o'clock in the morning and continues until ten . . . . the first thing he does when he leaves work is to go to the public-house for he feels ennervated."[27] While the employers complained that the fewer hours spent in the factory would mean more hours in the public-house, the Society could show that when the nine-hour day was established the number of working men attending Technical Institutes increased.[28] When work stopped at 5 or 6 o'clock in the evening the most enterprising of the young engineers at last had a chance of developing their knowledge and the existence of Mechanics' Institutes ceased to be such a mockery. In 1880 the engineers demonstrated how keenly technical education was regarded by making the memorial to Allan and Newton, the founders of the Society, a yearly prize in books to the young members, or sons of members, who obtained highest marks in the examinations of the Science and Art Department, South Kensington.

The older members took the Society's business seriously in their spare time. Many branch meetings were held on a Saturday night so that the engineers could devote their longest free evening of the week to "the Club." No office in the branch was a sinecure, but the branch secretary bore the heaviest burden. Not only did he have to keep his books in order after his day's work, but also his home was the calling place for members of his own branch, and for all those "on travel" in the town. His wife shared his work by welcoming those who called while he was away at the factory. The long list of gifts ranging from gold time-pieces to electro-plated coffee sets presented to branch secretaries and their wives for devoted service was but a token of the part these members played in the stability and strengthening of the Society.

At home, the engineer had to fight different evils from those in the factory. Bad as working conditions were, living conditions in the new towns, hurriedly built, with thought only for convenience to the factory and none for the health and well-being of the occupants, were worse. Engineering was not a particularly unhealthy trade yet the average age of the members at death between 1860 and 1870 was only 37½ years and of these nearly one third, at the average age of 32, were caused by consumption or phthisis (respiratory tuberculosis), both diseases encouraged by bad living conditions. Shorter hours of work and higher real wages along with a general improvement in housing conditions and medical science had raised the average age of death of the members in 1885-89 to 48 years, but the wives of members who bore the full brunt of the insanitary living conditions had only increased their average span of life from 36 years in 1860-69, to barely 44 years in 1885-89.[29] It is not difficult to imagine from the comparatively young age at which the average member and his wife died, and the high percentage dying from slow and painful diseases, the amount of sickness and attendant worry faced in the household. It is only in this background that the stress placed by the Society on the payment of benefits to its members in sickness, unemployment and old age, sometimes to the exclusion of all other matters, can be understood.

CHAPTER III

Training, Discipline, and Organisation: 1852–1866

The lock-out of 1852 was a defeat for the newly-formed Amalgamated Society of Engineers but not a disaster. The Society had retained its capable and efficient leaders, expunged all "obnoxious" clauses from the rule book and pledged itself to "build better than ever before." This policy was assisted by the period of general trade prosperity which followed the lock-out. The depression of 1858 was shortlived and while the "cotton famine" of 1862-1864 was serious for the builders of textile machinery it was limited in its effect on the trade as a whole. Judged by the yardstick of growth in membership, absence of disputes and conflicts on policy, the development of the Society matched the upward trend of trade in relative smoothness and absence of the spectacular. Every year saw an addition to the total membership and accummulated funds, and with the exception of a strike at the Atlas Works, Manchester, no disputes of any significance occurred. Witness to this is the absence of any grants from the Contingent, or Strike, Fund during these years. The main aim of the Society continued to be the ending of redundancy in the labour market and, with the collapse of support for co-operative enterprise, the trade policies on overtime, piece-work, illegal men and the number of apprentices, though no longer expressed in rule, held the field as the means of securing this end.

But the apparent routine character of the Society's activities concealed very important developments in methods, structure and outlook. It was in these years that principles were moulded which were to dominate the Society to the close of the century. The changes were threefold : different methods were developed in relations with the employers : the organisation of the Society underwent an unwritten but very real change : and the Society abandoned the exclusiveness which had long characterised the engineers and began to play a leading role in assisting and guiding other sections of the working class.

The experience of the lock-out had led the Society to abandon the strike as a method of securing its objects. In particular the Executive Council, which before the lock-out had expressed doubts as to the effectiveness of withdrawal of members, became convinced that strikes were not only useless but dangerous. Whenever a disagreement was reported to the Executive, the advice to the membership on many occasions was "to act with great caution and by all means to avoid measures calculated to bring about a strike among the workmen."[1] But this caution did not mean that attempts to improve the conditions of trade were abandoned. The aims remained but the methods changed.

In spite of their victory in the lock-out and the use of the "Document," the employers were forced to recognise a limited form of collective bargaining. The legalising of trade societies in 1824 had not meant their automatic recognition and almost all employers refused to admit the right of the Society to represent the men and refused to receive delegations. A one-way notice-board was the channel of communication in the majority of shops. William Newton remarked that "if a reduction of wages throughout an establishment is contemplated, it is generally notified by a notice being posted in some prominent part of the workshops that a reduction to the extent of 5 or 10 per cent. will take place at a certain time . . . I never knew of an instance in our trade where the men were consulted previous to such a notice being put up."[2]

With this background the efforts of the Society were devoted to tempering the arrogance of the employers and forcing them to receive deputations and agree to prior consultation. In every dispute or disagreement the advice of the Executive was a deputation of the men, strengthened where necessary by a District Committeeman or in important cases by a member of the Executive. This persistence in pressing for negotiations yielded results and a measure of progress was the interview accorded in 1866 by Platt's of Oldham, the leading Society breaker of the 'fifties, to representatives of the Society, acting on the advice of the Executive, with a request for the reduction of hours from 58½ to 57½ per week.[3] The complaints of a Manchester employer illustrated the degree to which the employers had to reckon with the influence of the Society and the unified character of that influence.

> "Before 1851-2, we knew almost every workman in the place by name and dealt with him individually. Since that we have always had in our eye at a distance the controlling influence of a club that sits in London."[4]

The one-sided contract between the individual worker in need of a job and the employer who could pick and choose was being slowly replaced by the far more equal contract between the Society and the employer.

Where deputations to the employer failed to secure their end the Executive advised a scheme of "passive resistance." If the issue was one of resistance to the employment of too many apprentices or the employment of labourers on machines, Society members were instructed not to teach them the trade, with the guarantee that if they were dismissed they would be paid donation benefit. If a reduction of wages was threatened or men were earning less than the average rate of wages in the district, the shop was "closed" to Society men and those who already worked there withdrawn and given donation benefit while in search of another job. The rapid growth in Society membership, the very careful attention paid to travel rules and the regular demand for engineering workers, except in short periods of bad trade, made this policy of passive resistance as effective and more economical than a series of strikes.

Much attention was paid, particularly by the leadership, to Councils of Conciliation as a method of settling disputes without recourse to strikes. Mr. McKinnon, a Liberal M.P., urged the use of these methods and a Select Committee of the House of Commons was appointed on the subject in 1856. On behalf of the Society, William Newton gave evidence thus:

> "I know of no strike that ever occurred that might not have been settled by a Board [of Conciliation]."[5]

Such Courts were however opposed by many employers, and their spokesman, Sidney Smith, claimed that they would be "a very dangerous interference with trade." This opposition was strong enough to kill the idea and although a further Select Committee sat in 1860, following the building trades lock-out and a Conciliation Act was passed in 1867, the latter was a dead letter as far as the engineering industry was concerned.

What criticism there was of the Society's moderate policy and caution on trade questions came from outside the ranks of the engineers rather than from the membership. In practice the carrying out of trade policies was still largely in the hands of the branches and District Committees and the rank and file accepted rather than challenged the general policy. Acquiescence was further assisted by good trade and by the noticeable strides taken by the leadership to fulfil the promise made at the close of the lock-out that the Society would be restored and made greater than ever. It was to this task that the main energies of the Society were devoted and in its achievement the talents of William Allan were displayed to the full.

Building an Organisation

The trade societies of the first half of the nineteenth century were extremely rudimentary in their organisation, and one of the reasons for the failure of the national societies of the period undoubtedly had been the inability to devise a form of organisation which could give effective centralised leadership while allowing for a high degree of self-government in the localities. Adherence to fairly rigid rules, efficiency, and prompt attention to all transactions and the recognition of the authority of the leadership, were features of the new Society which had to be grasped by a membership little experienced in running a permanent nation-wide organisation. The A.S.E. in this period was able—though not without many difficulties—to build an organisation which could weather all storms, and which in its general outlines served as a model for the trade union movement as a whole.

One of the first steps taken was to raise the standard of behaviour of the membership and to ensure that the rowdiness and sometimes drunkeness and disorder which had so long tended to be associated with union meetings became a matter of the past. Exclusions from the Society for immoral behaviour were placed on a par with exclusions for acting contrary to the interests of the Society. Fine or exclusion for swearing, rowdiness at branch meetings and even for showing "unnecessary independence towards employers" were laid down in rule. While meetings were still held in public-houses, the 1857 Delegate Meeting introduced the rule, not without opposition, that branch secretaries must not be publicans, and every effort was made to make branch meetings models of procedure and language. The sympathetic but firm approach of the Executive Council to the need for improving the manners and behaviour of members is well illustrated by their resolution of January, 1853 in connection with an appeal by a member against a fine for swearing at a branch meeting:

> "That the Executive Council does not approve of the language used by Francis Currie of the Greenock Branch for which he was fined but as the expressions were used merely to illustrate the subject he was discussing, he be exempt from the fine. At the same time the Council trust that Francis Currie will never make use of such language again in our meeting rooms either in illustration or otherwise as it is bad taste to use such expressions."

The second concern was the training of efficient branch secretaries and officers, not an easy task at a time when there was no compulsory education and many members had received no schooling. If the branch was to be run efficiently, a great deal of time and attention was required on the part of the secretary who was responsible for making a monthly, quarterly and annual return to the General Office on the number of members, those in receipt of the various benefits, the state of trade in the area, and the state of the funds. The complicated book-keeping, auditing, the equalisation of funds, and the banking of the Society's money involved other officers and such tasks were far from simple. It is not surprising therefore to find the General Secretary's remarks in the *Monthly Reports* a series of patient complaints about the inefficiency of the branch officers. In November, 1852, Allan writes "It would appear that the officers of the branches have either not understood or appreciated that good and effective principle in our rule called an Equalisation of Funds," and in 1855 he complains of "informal and in some cases inaccurate manner in which branch reports were sent to the General Office."[6] In 1856 he excuses the late appearance of the Annual Report and gives as the reason "that many reports from branches had to be sent back for correction and many arrived late." Year after year the complaints continued and as the secretaries and officers became more efficient, so the standard itself was raised and uniformity in accounts, returns and schedules took the place of informality and carelessness.

These efforts were well repaid. Branch officials, particularly the branch secretary, were key figures in the smooth working and local reputation of the Society, and it was the attention paid to them in these years that led to a generation of branch secretaries whose numbers, ability and devotion to their members was an object lesson to every trade union in the country.

At the same time as officers were being carefully trained to run the branches, an efficient central administration was being built. The Executive Council which met in the evenings after work three or four times a week, with occasional day meetings, covered a tremendous amount of business. It dealt not only with general policy, trade questions and interpretation of the rules, but was responsible for deciding whether members were entitled to "benevolent" grants when in distress, or accident benefit if disabled and it heard appeals from members against branch decisions. Individual discipline to control this volume of business was necessary and Councilmen who were more than ten minutes late were fined sixpence, and meetings strictly limited to two hours. The London branches, who elected the Councilmen, were informed if their representative was a bad attender.

An indication of the growing efficiency of the General Office and the pride taken in this efficiency is seen in the *Reports* of the Society. In 1861 Allan wrote:

> "Every year I have been enabled to present some new feature in the Annual Report, either to simplify the statement of accounts or to present at a glance a complete history of the financial progress and condition of the Society. I have taken great interest in doing so, because I feel that the more explanatory our financial statement is, the more clear it is made to the comprehension of the youngest of our members, the greater the confidence which must exist throughout the Society and the greater the impetus which will be given to its progress."[7]
>
> And in 1864 he proudly notes that the variety of information "exhibits a completeness of organisation and order as well as the establishment of a system which without egotism I may say reflects credit upon workingmen."[8]

Such an organisation could not be run efficiently by one man—even if that man be an Allan. During the lock-out an office boy was employed at 6s. a week to run errands and pack up parcels, and the Delegate Meeting of 1852 decided to appoint a full-time Vacant Book Officer in Manchester. While Allan's salary had been increased to £3 10s. 0d. a week in 1860, it was not until 1863 that members agreed that the job of minute keeping, compilation of reports, deputations all over the country and voluminous handwritten correspondence with branches needed extra assistance. In that year William Powell, who had been the Manchester Vacant Book Keeper for ten years was elected Assistant Secretary at £2 5s. 0d. a week, and in 1866 an additional Secretary, John Wilson of Crewe was elected. The General Office organisation, now housed at 54, Stamford Street, London, was taking shape.

The Authority of the Executive

Ensuring the authority of the Executive Council proved a more difficult task. The tradition of the former local societies died hard and the compromise of 1851—a centralised organisation with leadership from the Executive Council on the one hand, offset by the creation of powerful District Committees on the other—was carried further at the 1852 and 1854 Delegate Meetings. The District Committees were pared of their rights to withdraw members from situations, but on the other hand provision was made for the setting up of Central District Committees composed of representatives from District Committees over an area. It was hoped that these Central Committees would lead to "more combined action . . . in the interests of the Society and Trade generally."[9] This they did but they also led to conflicts with the authority of the Executive.

In the 'fifties several branches, among them Greenwich, London East, Lambeth 2nd, and Birmingham had to be threatened with suspension to make them comply with Executive decisions. The Manchester Central District Committee was reprimanded in July 1858 for closing the vacant-book office during Whit week and had to be sharply reminded that the vacant-book keeper, locally known as the "General Secretary of the North" was responsible not to the Manchester District Committee but to the Executive Council.

It was in Greenock and Glasgow however that the authority of the Council was put to the real test. In March, 1858, the Greenock Branch objected to a grant of £25 made by the Executive Council to the Greenock Shipwrights during a strike, and announced their intention of refusing to remit the equalisation money due by them to the Manchester 1st branch. The Executive suspended the branch and when the Glasgow 1st and 2nd branches supported Greenock, they were also suspended. A struggle then ensued between the Executive Council, who sent the General Secretary on a tour of the Scottish branches to prevent further defections, and Greenock and Glasgow branches who circularised all the Northern branches regarding the unjustness of the actions of the Executive. A new branch for the "faithful" members was opened in Glasgow and finally in April, 1859, the Executive were informed, through the Paisley branch, that Greenock were about to pay their equalisation money to Manchester and having done so were reinstated. Trouble on the Clyde was not over however, and in November, 1861, the Clyde Central District Committee was disbanded for dealing with matters outside its jurisdiction and for interfering with the functions of the branches, and was not re-formed until 1875.

The relations between the Executive and the branches were not made easier by the absence of Delegate Meetings. In the twenty years between the Leeds meeting of 1854 and the Newcastle meeting of 1874 only two meetings of this body were held, in 1857 and 1864. The power to call meetings was in the hands of the membership, a vote being taken each year after 1860, but the advice regularly tendered by the Executive and accepted by the membership was that such a meeting would be an expensive luxury. They were certainly expensive. Every branch with over forty members (after 1864 over eighty members) was entitled to send a delegate and with the meetings lasting over a a month expenses were between £2,000 and £3,000. But for a Society of over 30,000 members conferences of the rank and file to discuss policy could hardly be called a luxury. The 1864 Delegate Meeting did however introduce a more workable check on the authority of the Executive (known as the Local Council) when it replaced the cumbersome right of appeal of branches to the membership as a whole, by forming the provincial members of the General Executive Council "into a court of arbitration between Branches and the Local Council."

Improvement in the efficiency of the branches and of the central authority was achieved in these years, but the equally important problem of making the Society alive and responsive to the changes in the trade and in the outlook of the rank and file was left to future generations. Threats of suspensions and expulsion, and the machinery to ensure that these threats were effective, were no substitute for unity of policy and outlook which could only be derived from interchange of opinion and flexibility.

The Society and the Trade Union Movement

The growing maturity of the Society was also shown in its negotiations with the Government and relations with its brother working-class organisations. The relations with Parliament took the form of pressure to obtain legal security for the Society. From the start it had been clear to the members that if they were to be more than a fly-by-night organisation their rules, activities and funds had to be on the right side of the law and steps had to be taken to change laws which were contrary to their interests. On formation of the Society, the Attorney General had been consulted as to the legality of the trade protection rules, and in 1854 when informed by Christian Socialist friends that a new Bill on Friendly Societies then before the House of Commons would, if passed, threaten their existence and the existence of similar trade societies, the Executive Council immediately called together a Metropolitan Trades Delegates' Meeting in their office. A sub-committee was formed with Allan as Chairman and for two years by interviews, lobbying and petitions, conducted a successful agitation to amend the Bill. Eighty seven trade societies took part in this movement, aided, though not led, by middle-class radicals inside and outside the House of Commons. This was the beginning of a new method of pressure to obtain security and legality for working-class associations.

A further illustration of this approach was in 1863 when the Executive Council, reviewing the loss of monies to the Society through bank failures, resolved to "wait upon Mr. Gladstone, M.P., for the purpose of getting him, if possible, to introduce a clause in the Post Office Savings Bank Act to make that bank available for our Society."[10] The result was a successful interview with Mr. Gladstone by Robert Danter, Chairman of the Executive, and William Allan, and by 1866 over £40,000 had been deposited in these banks.

In carrying through these measures the engineers realised that the aloofness and separation from other organisations of the working class which had characterised their societies before the amalgamation must go. As the leading trade union of the country, the engineers were in a position to assist and guide other workers struggling in smaller and less powerful unions.

Direct assistance took the form of money grants or loans to societies in conflict with their employers. The A.S.E. knew from their experience in the lock-out the disastrous results of lack of funds in a dispute. Within two years of the lock-out, they had granted £720 to the cotton spinners of Preston and this was the first of a series of grants which gained for the Society an unsurpassed reputation for generosity. Executive Council meetings frequently heard deputations from other

Societies asking for assistance, and between 1853 and 1866 inclusive, 179 grants ranging from £5 to over £3,000 were made. In the building trades lock-out of 1859-1860 "the greatest sensation . . . was caused by the A.S.E. which astounded the Conference [Building Trades] and the employers by presenting the lock-out funds with £1,000 every week for three weeks. Such a subscription had never before been heard of and its moral effect in encouraging the men and flabbergasting the employers helped very greatly in defeating the attack."[11]

Monetary assistance was supplemented by advice and guidance. The A.S.E. rightly considered itself "an organisation perhaps more perfect in detail than any organisation of workingmen in existence,"[12] and it was prepared to assist its imitators in other trades in every way possible. When the carpenters wished to form an amalgamated society, it was to Allan and the rules of the A.S.E. that they turned for advice and assistance, and this advice was followed so closely that Allan could say "that Society may be said to be similar in every respect to our own."[13]

The London Trades Council was formed in 1860 and unlike its predecesser the Metropolitan Trades Committee held regular meetings. It stimulated the growing trade union movement, helping and guiding the different unions by advice and by approval or disapproval of their appeals for financial assistance in their struggles. The A.S.E. gave it their full support, sending delegates every year and playing a leading role in discussions. For some time the Chairman of the Council was Robert Danter of the Executive Council of the A.S.E.

The engineers through the growth and stability of their Society, through their generosity and assistance to other trades, through the strong impression created by their leaders in the lobbies of the House of Commons and in the sanctums of Ministers, had helped to raise trade unions to a position of respect and to justify them in the eyes of the general public. In 1863 Allan reported :

> "We have great pleasure in saying that men in high position outside our Society are taking the greatest interest in our operations and peruse our documents with great care confessing that they see in them elements of greatness and progress the credit for which is not often given to workingmen."[14]

It was indeed a big change from the charges of anarchism levelled against the Society ten years earlier.

William Allan

The years from 1852 to 1866 thus saw the building of a strong and stable organisation in the engineering trade. An indication of the tremendous strides forward can be seen in the membership figures which grew from a bare 9,737 in December, 1852, to 33,007 in December, 1866, while funds in the same period increased from £7,103 to £138,113. Branches of the Society which had numbered 128 in December, 1852, numbered 305 in 1866.

In 1859-60 branches of the Steam Engine Makers' Society in Manchester, Bradford, Huddersfield, Lancaster and Southampton joined the A.S.E. after serious differences of opinion with the Executives of their old Society. In 1861 Bolton Branch of the Old Smiths' amalgamated and was followed four years later by the Melbourne Branch of the same Society. On the other hand applications to amalgamate by the Spindle and Flyer Makers' Society in 1860 and by the New Engineers' and Machinists' Society of London in 1862 were rejected ; in the former case, on trade grounds, the applicants were not held to have a sufficient range of skill, and in the latter case the high average age of the members would lead, it was thought, to a heavy drain on the superannuation fund.

These fourteen years of comparative peace during which the Society was able to devote its attention to the strengthening of its own organisation laid a foundation on which it could rely during the disturbances of the next ten years.

The re-building of the Society after the defeat of 1852, the emergence of the engineers as leaders of the trade union movement and the development of a new conception of trade unionism as respectable, solid and sound, was largely the result of William Allan's expert leadership. His personality, talents and shortcomings were reflected in the activities of the Society following the lock-out, in the same way as Newton's exuberance marked the first two years of the Society's existence.

Allan was born in 1813 of Scotch parents in Carrickfergus, Ulster. He started work at twelve years of age as a cotton piecer and at fifteen was apprenticed as an engineer in Glasgow. After working in Liverpool, he moved to a Crewe railway shop and joined the "Old Mechanics" in 1843. Within five years, his ability and activity for the Society, particularly in connection with the Newton-le-Willows dispute, led to his being appointed, at the age of thirty five, Secretary of the Society, chosen from eighteen other candidates. From that date until his death twenty six years later, he remained Secretary, unopposed at elections. As taciturn as Newton was voluble he brought to office a tremendous capacity for hard and painstaking work and was expert both within and outside the Society in negotiation and conference with members, M.P's and employers.

His efficiency during these years cannot be questioned. The progress of the Society, the tremendous growth in membership and funds, the innumerable carefully compiled documents which were his handiwork, were sufficient testimony to his painstaking attention to detail, his powers of concentration and his indomitable energy. Allan was the first man in the British trade union movement to show how a large nation-wide society could function and prove its superiority over the smaller craft or district societies from which it had sprung. The rules of the Society which had been adopted from the "Old Mechanics" almost in their entirety, proved efficient and workable for the most part. His special contribution was seeing that these rules were correctly interpreted and effectively carried out. His patient advice to branch officers through correspondence, monthly reports and frequent visits to branch meetings throughout the country and his insistence on the maintenance of both the spirit and letter of the rules in all circumstances, welded the Society into one complete whole and inured it with a stability which no other extensive trade union had ever known.

On the amalgamation Allan had set himself the task of changing the methods of trade unionism. "There is no use to proceed in the usual careless style whilst trade is good, allowing matters to take their own course and when a depression comes along being ill prepared for the difficulties that surround us," he had written in 1851.[15] His great contribution was to take this carelessness out of trade unionism. That this tended to become his sole aim and not a means to an end was a point of criticism of his work at the time, and subsequently. But while he undoubtedly lost no opportunity for advising caution, and often saw the detail of the organisation as so perfect that rough blasts from the rank and file at Delegate Meetings were to be avoided for fear of upsetting the balance, it was the character of the period rather than the character of the man which involved the Society in negotiations rather than strikes, and in attention to efficient machinery rather than the development of a consistent trade policy.

Progress had been made in the improvement of wages and working conditions, and the respect for the Society which Allan helped to gain was a respect born of equality of strength rather than the patronage invoked by a timid and retreating policy. The evidence of the employers before the Commission of 1867 left no mistake about that. At this enquiry, when trade unionism was on trial, Allan for his part discarded the refuge sought by so many apologists with his blunt answer to the question "Is not the interest of the employer and the employed to work together" ? "There I differ," he said. "Every day of the week I hear that the interests are identical. I scarcely see how they can be while we are in a state of society which recognises the principle of buying in the cheapest and selling in the dearest market. It is in their interest to get the labour done at as low a rate as possible and it is ours to get as high rate of wages as possible and you can never reconcile these two things." Advocacy of Councils of Conciliation, negotiations and deputations, and careful attention to the funds of the Society never blinded Allan to the realities of economic strife.

Allan died in October, 1874 after a protracted period of painful suffering from Bright's disease during which he continued his work without any pause. The funeral procession to Norwood cemetery where he was buried was impressive. It numbered over six hundred, and was headed by the band of the Chatham and Dover Railway Shop —one of the main strongholds of the Society in London—representatives from provincial branches of the Society, the London Trades Council, the Parliamentary Committee of the Trades Union Congress and the Labour Representation League, and others associated with Allan "in all those works of social and political amelioration with which he has been connected for years."[16] A moving tribute was made by the Philadelphia Branch, U.S.A., which resolved, on hearing the news of his death, to drape the clubroom in mourning for thirty days.[17] It was with truth that John Wilson, the pro-tem General Secretary, referred to William Allan "as one who has left his footprints on the sands of time."[18]

CHAPTER IV

The Attack on Trade Unions and the Nine Hours Success: 1866–1874

The calm of the years between 1852 and 1866 were over for the A.S.E. In the next eight years it was to face, alongside other trade societies "the last and most formidable attempt by a section of the employers to return to the old system of suppression of trade unions."[1] The societies defeated this attack and the engineers started a counter-attack followed by workers in other trades which led to a great growth of trade unionism and substantial gains in working conditions.

The attack was not a bolt from the blue. Whilst there had been no pitched battles in the early 'sixties in the engineering industry this was not the case in other trades. The employers saw clearly that the steadily growing "amalgamated" unions, supplemented by the harassing tactics of the older type of sectional society, presented a more serious industrial challenge than had the ephemeral mass unions of the 'thirties. A running battle on both the legal and industrial fields had been fought with increasing intensity between the unions and employers in the 'fifties and 'sixties. In the legal field the system of appointing employers as magistrates, a sequel to the victory of the industrialists over the landowners in the Reform Act of 1832, had weighted further against the workers an already biased law. In particular the law on picketing left wide discretionary powers in the hands of magistrates which they did not hesitate to use against the workers, and the Master and Servant Act, which provided for criminal proceedings against a worker if he broke a contract, yet only allowed damages against the employer found guilty of a similar offence, was the grossest travesty of justice, both in law and in practice.

On the industrial field the "Document" and the lock-out were the chief weapons used by the employers, but these could be and were more successfully resisted by the workers. The gradual breaking down of the rivalries between the societies, and the growth of a central leadership, though in an elementary form, had strengthened the unions. At the same time, however, the recurrence of strikes and lock-outs in a number of trades in these years and the violent methods of some of the smaller sectional societies had alienated public opinion. In spite of the patient efforts of Allan to display unionism as respectable and efficient, the general public was usually ill-informed of the issue at dispute and only too readily blamed the workers, encouraging the employers to further efforts to stifle the unions. It was in this atmosphere that a section of the employers seized the opportunity offered them by the murder of a non-unionist in Sheffield in October, 1866, to demand an investigation with the aim of indicting trade unionism as a whole. The great national trade unions saw the danger of the notoriously secret and violent methods of some of the Sheffield societies being taken as the hall-mark of union policy instead of as an isolated case and hastened to disassociate themselves from the murder. The London Trades Council elected a delegate to go to Sheffield to investigate and the Executive Council of the A.S.E. felt the matter sufficiently serious to elect their chairman, Robert Danter, to accompany him. They also welcomed the proposal to institute a public enquiry and in January, 1867, the Government set up a Royal Commission to investigate both the outrages and the entire trade union movement.

In the same month a culminating blow was struck against the unions in the legal field. They had succeeded in 1855 in amending the Friendly Societies Bill in a way which, in the opinion of the Attorney General Mr. Cockburn, would protect union funds. But in 1867 this same gentleman, now Lord Chief Justice, handed down the decision, in the case of Hornsby v. Close in which the Boilermakers were suing a branch secretary for withdrawal of funds, that trade unions were "in restraint of trade" and therefore illegal conspiracies not eligible for registration under the Act. The funds of the unions, including those of the A.S.E., which were the largest and amounted to over £130,000, now lay unprotected from the wiles of dishonest members.

The Counter-attack

To counter this legal attack Allan and the other leaders of the national societies increased their political and parliamentary action. To change the laws and to prevent new laws being introduced against unions, they sought to enlarge their influence among Members of Parliament and to secure direct representation of the unions in the House of Commons. But before direct representation could be achieved an extension of the franchise to include working men was necessary and to this end Allan and other leading union officials had joined the newly-formed National Reform League in 1865. This organisation, along with the London Workingmen's Association led by George Potter, had increased its activities after the defeat of a Reform Bill in the House of Commons in June, 1866, and in December Allan had moved a strong resolution at the London Trades Council declaring that:

> "The House of Commons by its treachery to Reform has lost the confidence of the people . . . and forced on Trade Unionists . . . the absolute necessity of assisting the present agitation for the enfranchisement of the working classes of this kingdom now unjustly excluded by class laws made by a class-elected Parliament."

Although Allan added to his resolution that "while advising the great bodies of trade unionists thus to act, we have no desire to make our societies channels for political action"[2] there was no doubt as to his deep feeling on the importance of the question and his opinion as to the role that the organised workers should play. While Queen Victoria and Lord John Russell in their isolation could refer in 1866 to "the apathy . . . which exists in the country on the subject of reform"[3] there was no mistaking the temper of the people in 1867 expressed in the large demonstrations, and within six months the Reform Bill was passed giving the vote to the skilled artisan.

Political action did not stop there. It was realised that the vote by itself did not ensure legislation in favour of the working class and in 1869 the Labour Representation League was formed. Allan became its treasurer. The object of the League was :

> "To secure the return to Parliament of qualified workingmen . . . and to recommend and support as candidates from among other classes such persons . . . as have proved themselved friendly . . . it will watch the progress of Bills in Parliament which deal with workingmen's interests . . ."[4]

Here was a policy combining constant pressure on the Liberals with direct election of workingmen, to redress the bias of a Parliament representing the employing class.

This activity of Allan, Newton, Danter and other leaders of the engineers was undertaken in an individual capacity. While some branches said too little was being done by the powerful A.S.E. in the cause of political reform, others complained that the General Secretary was exceeding the rules of the Society. The Executive Council accepted the latter criticism in part and refused to identify the Society with the Reform League reaffirming the opinion that "the Society should not allow either political or religious matters to be introduced or discussed at any of its meetings."

But where the issue was obviously concerned with the status of trade unions as such no objections were raised to Allan's methods of putting pressure on the Liberals and of constant lobbying and Parliamentary agitation.

Immediately following the decision of the Lord Chief Justice in the case of the Boilermakers a "Conference of the Amalgamated Trades" was called at the general office of the Engineers at which representatives of the Ironmoulders, Carpenters, Bricklayers, and Vellum Binders were present. This Conference met regularly until 1871 but was not the widely representative organisation that its name implied. In reality it was the self-appointed executive of the trade union movement formed by a group of the most able and powerful trade union leaders. George Potter and to a lesser extent some of the Northern trade unionists challenged their authority to speak for trade unionism as a whole but these attacks failed before the ability and success of the Conference. The aims were to achieve not only security for the funds of the trade unions but also a legal recognition of their right to collective bargaining.

From the first meeting delegates were elected to wait on the Home Secretary to define the Friendly Societies' Act, and on Mr. Neate, a radical M.P., who promised to draft a bill which would afford the trade societies security for their funds. Subsequent meetings were devoted to drawing up a plan of action in relation to the Royal Commission which commenced its hearings in April, 1867. Allan, and Robert Applegarth of the Carpenters were not only the two chief witnesses for the trade unions at the Royal Commission ; they were also the power behind the scene, sparing no effort to ensure that the findings of the Commission should not merely vindicate the great trade societies but lead to favourable legislation. They did not succeed in persuading the Government to appoint a trade unionist as a member of the Commission, but they were allowed to recommend a representative and chose a lawyer, Frederic Harrison, who together with Thomas Hughes, a lifelong friend of the movement, did them great service.

Allan and Applegarth were the two men most fitted to convey to the public through the evidence at the Commission the impression that the great national trade societies were respectable bodies whose main function was the relief of their members in unemployment, sickness, old age and death. Whilst they did not deny that their aim was also to secure certain minimum conditions and wage rates in the various industries, they laid stress on the conciliatory and peaceful manner in which they attempted to settle disputes.

The employers did not appear so reasonable and those engineering employers who gave evidence showed themselves to be grasping and obstinate. James Nasmyth gave his usual pæon of praise for the great advances of the "self-acting" tool which could do the work of mere man, but when questioned closely on wages and profits he revealed his true nature. He told how a worker in his shop had been transferred from operating one machine for 16*s*. a week to operating six for 21*s*. a week. At the same time the profits had risen from £1 to £6. Asked whether he thought this was fair to the worker he replied: "I was very niggardly . . . only the usual principle of business is to get your work done as economically as possible."[5] The attempts of a trade society to make a more equal bargain for the worker in face of these huge profits was condemned as "intolerable arrogance." John Robinson of the Manchester Atlas works summed up the intractable attitude of the engineering employers to collective bargaining by saying: "I think you must get a new generation before you can get employers to accept the union as a power or as an authority to discuss any questions."[6] But the engineers were not prepared to wait for a new generation.

The final report of the Commission in 1869 gave the employers no grounds for pursuing their demands for the suppression of the trade unions. On the contrary, the comment of *The Times* that "True statesmanship will seek neither to augment nor to reduce their influence, but accepting it as a fact, will give it free scope for legitimate development."[7] was an indication that the time was now ripe for a further movement to secure legal recognition for trade unionism.

The Trade Union Act of 1871, which gave the trade unions protection for their funds and the right to deal with internal questions without interference from the Courts, was not a complete victory. In the same year the Government yielded to the pressure of the employers by passing the Criminal Law Amendment Act which could be—and was—interpreted by the Courts to make any action, such as picketing, by trade unions in defence of their interests, an illegal conspiracy.

Steps to counter this Act were taken by a strengthened and more unified movement. The parliamentary agitation conducted by the Conference of Amalgamated Trades had won a signal victory, but in trade union circles in both London and the northern provincial centres, the demand for a much wider leadership, elected and not merely self-appointed, was growing. George Potter, editor of *The Beehive* and Secretary of the London Workingmen's Association who had kept up a running fire of criticism of the Conference of Amalgamated Trades joined forces with Alexander Macdonald the miners' leader, and with Alexander Campbell of the Glasgow Trades Council, who had been largely responsible for the efficiently conducted parliamentary agitation which, backed by many newly-formed trades councils, had resulted in the amendment of the one-sided Master and Servant Act in 1867.

The unity of action of trades councils and unions who had their headquarters outside London achieved on this issue was maintained when the Manchester Trades Council in 1868 called the first Trades Union Congress followed by another in Birmingham in 1869. The A.S.E. was not represented at either of these Congresses, maintaining its allegiance to the Conference of Amalgamated Trades. But the passage of the Criminal Law Amendment Act made all realise that the two bodies could not continue to work in isolation, and the Conference of Amalgamated Trades supported the calling of the third Trades Union Congress in London. At this meeting, a Parliamentary Committee was elected on which Allan took the position of Treasurer, and after a short period of joint working, the Conference of Amalgamated Trades merged into the larger and more representative body.

The first efforts of the T.U.C. were concentrated on securing the repeal of the Criminal Law Amendment Act. The A.S.E. described it as "intended to operate in the interests of capital and to prevent if possible workmen from maintaining their rights and privileges" and pledged themselves to "never rest satisfied until this disgraceful Act is totally repealed."[8]

The refusal of the Liberal Government under Gladstone to repeal the Act angered the workers and contributed to its defeat at the General Election in 1874. The appointment of the notorious Sidney Smith as Secretary of the City of London Liberal Association further confirmed the opinion of the workers as to the direction in which the Liberals were moving. The Labour Representation League decided to put up working-class candidates—two being returned in Liberal constituencies—and on a split vote many Liberals were defeated. The Tories who had pledged themselves to action prevaricated once they were in power. Instead of immediately repealing the obnoxious Act they set up yet another Select Committee to enquire into the workings of the Labour Laws. The Parliamentary Committee of the T.U.C. condemned the enquiry and refused to give evidence before it, for they saw further discussion as an excuse for inaction.

Pressure was continued in other ways for the repeal. The vicious and stupid sentences passed on pickets under the Act were publicised, and assistance was given to unions fighting appeals, for "we must retain our right to picket by getting decisions in our favour however expensive in courts of law." In June, 1875, John Burnett, the new General Secretary of the A.S.E., led a deputation from Executive Council to the Home Secretary to ask for a repeal of the Act, and a year later the concerted efforts of the entire movement were successful. By the Trade Union Act of 1876 trade unions were recognised as corporate bodies, the right to peaceful picketing was allowed and the Criminal Law Amendment Act repealed.

This parliamentary activity conducted by Allan and a small circle of the leadership did not involve the membership to any great extent, particularly when the leadership of the trade unions was in the hands of the Conference of Amalgamated Trades. Occasionally branches were asked to circulate petitions but they were specifically discouraged from joining in mass activity such as that undertaken by Potter's London Workingmen's Association.[9] With the formation of the T.U.C., however, and the great growth of trades councils between 1870 and 1875 the machinery was established for building a much closer unity between the activity of the leadership and of the rank and file.

Bread and Butter Questions

While defence and counter-attack on the legality of trade unionism was being waged by the leadership, the attention of the A.S.E. membership was turned to bread and butter questions. The years from 1866 to 1869 were years of comparative depression in the engineering industry; the number of members on the "vacant-book" increased as well as those on "travel" in search of employment. The employers used the depression as an excuse either to attempt reductions in wages, the introduction of piece-work and cheap apprentice labour, or to resist demands for wage increases and improvements in working conditions by the Society. The period of easy victories, when a deputation to the employer was generally sufficient to secure their demands, was over.

Three of the most important disputes of the period illustrate this change. In Liverpool and the surrounding area in 1866 the A.S.E. was forced to resort to a policy of withdrawing many of its members, negotiations to obtain a wage increase having failed. On the Clyde in August of the same year, the employers, through their newly-formed Clyde Shipbuilders' Assiciation locked-out the workers in a dispute on wages and hours. In Blackburn a strike against a 2*s*. per week reduction, the introduction of piece-work and the employment of an unlimited number of apprentices lasted from February, 1867, to April, 1868. In Liverpool and Blackburn the strikes ended in favour of the employers and on the Clyde in a compromise close to defeat.

It was becoming clear that if the A.S.E. was to continue to protect and improve working conditions a fresh approach was needed. The Contingent Fund which had not been levied since 1856 was re-instituted to deal with the Clyde lock-out. Following criticism of its activities in the Blackburn dispute, the Council called a Conference of the Blackburn, Manchester, Rochdale and Oldham Central District Committees at which Allan was present. While the purpose of the Conference was to vindicate the conduct of the Council, it also served to demonstrate the utility of frequent discussions on policy by members in the same area.

Subsequent district conferences held in Newcastle in July, 1870, and in Glasgow in February, 1871, at the request of the branches, were indications of the determination of members to improve their trade position by concerted action. The members were awakening. But the demand which was to secure the engineers one of the greatest victories in their history and to arouse workers in other trades to action was not directly broached at these meetings.

Since the shortening of hours of work in the 'forties, the A.S.E. had concentrated its demands in regard to hours on the abolition of systematic overtime. While the Melbourne, Australia, branch had won an eight-hour day in 1866, there had been no concerted movement for a reduction in the working day by the engineers of Britain. Although certain Scottish districts including Aberdeen, Dundee and Glasgow had been able to secure slight reductions between 1857 and 1866.

Hours varied from 57 a week on the Clyde to 58½ in London and 60 on the North East Coast. Other trades, however, particularly building, had demanded and in some cases achieved, a nine-hour day, and this example along with the increased intensity of labour due to machinery appears to have spurred on the engineers to emulation.[10]

The Nine Hour Movement

It was in Sunderland that the movement for a nine-hour day in engineering originated, and it was associated with the name of Andrew Gourley, President of the Sunderland branch of the A.S.E. Gourley never became prominent in the national trade union movement but his record showed that he had great qualities of leadership which he was content to employ on a local scale. He had been prominent in a movement for a Saturday half-holiday in Crewe in the 'fifties and as a result was frequently victimised. He migrated to the North East Coast where in 1866 he started an unsuccessful movement in Jarrow for the nine-hour day and was sacked from "the colossal establishment of Mr. Palmer," the Palmer Shipbuilding Company. It was later remarked :

> "The chances are that had Gourley been allowed to remain at Jarrow, he might very possibly have got a house through the medium of the Factory Building Society ; the possession of the house would have kept him quiet at Jarrow (the possession of a house having that effect upon a man, a fact which Mr. Palmer has not failed to note) he would never have originated the Sunderland strike, and the Nine Hour Movement would still have been left in the limbo of unfulfilled aspirations."[11]

Although attributing the Nine Hour Movement to one man was an exaggeration, it was true that when Gourley led the Sunderland engineers out on strike on April 1, 1871, a movement was started which was to have wide repercussions throughout the country.

The strike was called without the knowledge or sanction of the Executive Council who hastened to call a meeting of the Newcastle-on-Tyne Central District Committee at which Robert Austin, the Manchester Vacant Book keeper and Allan were present. The meeting strongly condemned "the hasty action of a few members of the Sunderland branch which precipitated the strike'[12] and elected a deputation to meet the local employers to negotiate a settlement despite the fact that one of the largest Sunderland firms had already given way when the strike had lasted only three weeks. In the negotiations the employers offered to introduce the nine-hour day on June 1, an offer which was accepted by the deputation. The Strike Committee representing the different shops and different unions and a mass meeting of the men, however, refused to accept this compromise and within a week the employers had conceded the full demands that the shorter working day should be introduced on May 2.

The ease with which this rapid and complete victory had been gained shook the Council's confidence in its own wisdom. It had not been prepared to take action in the first place, and when the strike commenced was prepared to accept a compromise which events proved unnecessary.

But their attitude towards the Nine Hour Movement was further modified by the strike which broke out in Newcastle in sympathy with the Sunderland movement. Following a deputation from the Sunderland strikers in the second week of their dispute urging the Newcastle men to make similar demands, a mass meeting was called which enthusiastically agreed but suggested that the question be submitted to arbitration. On May 2 a Newcastle Nine Hour League was formed and John Burnett, a leading member of the local A.S.E. was chosen as chairman. On the committee were elected representatives from most of the shops, many of whom were non-union men. Its first action was to put the demands to the employers in a conciliatory manner—demands which were rejected out of hand by the newly-formed Newcastle Employers' Association, dominated by Sir William Armstrong of Elswick. A further request for an interview and an offer to submit the question to arbitration failed to move the employers who used as an excuse the fact that the men at Clark, Guerney and Watson had already gone on strike. Towards the end of May with the expiration of legal notices—a safeguard against summonses for breach of contract—between 6,000 and 7,000 men came out and the employers resolved "that united opposition be given to the strike which has commenced."[13]

The strike lasted nearly five months and ended in a complete victory for the men. On October 9 the employers agreed to introduce the nine-hour day from January 1, 1872, the men in the meantime to work a 57-hour week in place of the 59 hours previously worked.

The strike was the largest since the lock-out of 1852 and it was significant that of the total number involved only about 800 were members of trade unions and of these only 500 were members of the

A.S.E. The North East Coast was a notoriously black spot as regards trade unionism, the tremendous expansion of the iron-shipbuilding industry in the 'sixties having enrolled thousands of workers unused to the principles of close organisation common to the older branches of the engineering industry. But despite this fact an efficient organisation was built up through the medium of the Nine Hour League, including both Society and non-Society men. Discipline and morale were maintained at a high level and strike pay which was 3*s.* a week in the early days had risen by the last week of the strike to 12*s.* per man and 1*s.* for each child in the family. Funds came from appeals and collections in the district, the Northumberland Miners' Association giving £20 a week "with the greatest regularity until a few weeks before the end of the strike when they doubled the amount."[14] Delegates were sent to Manchester, London, Scotland and other districts to solicit aid on behalf of the men and finally in July when the strike was seven weeks old the Executive Council of the A.S.E. "bestirred itself"[15] and urged branches to start collections.

In contrast to the lock-out of 1852 the employers failed to achieve working unity among themselves or support from the press. The Newcastle Employers' Association had assumed at the start, along with the Executive of the A.S.E., that the strike would collapse very rapidly. When the ability of the strike committee removed this illusion, they turned in time-honoured fashion for support from the engineering employers of other districts. A "National Employers' League" was formed and support was forthcoming from some employers in Leeds, Nottingham, Liverpool, Manchester and Glasgow, all of whom agreed to levy themselves two shillings per man employed, except Glasgow which agreed on one shilling. But a combination of employers had to include London if it was to be successful and at the end of August, the over-obliging Sidney Smith called a meeting of the London employers to hear a statement on the dispute from Percy Westmacott of Elswick. But the Londoners were not impressed. After discussion the majority expressed the opinion that they had no business to interfere in a Northern trade dispute and Westmacott and Sidney Smith went away empty handed.

The men were well supported by the press, both local and national, *The Times* in September castigating the employers for their "impudent and impolitic" conduct in refusing to negotiate and for adopting the doubtful course of introducing foreigners into the shops, and predicted their early defeat. Sir W. Armstrong complained that the men themselves could not have written a better article. This support for the men was no accident. Whilst the employers were adopting methods which could only turn public opinion against them—such as refusing to recognise the Nine Hour League, objecting to arbitration, and sending communications through a firm of solicitors—the men, led by Burnett, were using brilliant tactics to win support. The culmination of these was the clever refusal to accept Armstrong's offer of a reduction of hours from 59 to 57 per week instead of the 54 demanded by the men. This offer might have divided the men and certainly would have won public support for the employers, so Burnett on his own initiative replied in a letter in *The Times*:

> "Three hours divide us—you say you cannot afford them—we will buy them from you (by a reduction in wages) but we do sincerely wish to be allowed to leave work at 5 o'clock."

Armstrong had to turn down this offer with the lame excuse that a reduction of hours of work to 54 would lead to an increased demand for labour ending in an increase in wages. He was right, but he had failed to take public sympathy away from the men.

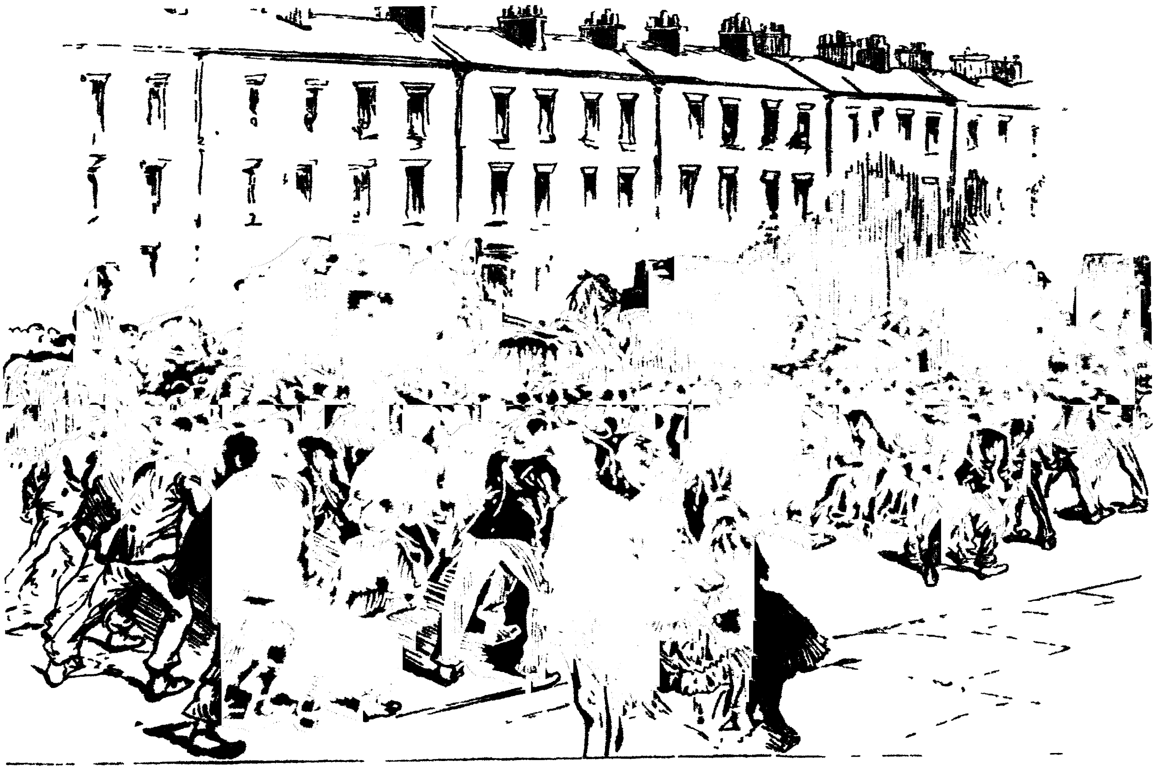
A minor parallel with the 1852 lock-out was the attempt by some of the men to open a co-operative engineering workshop. The Ouseburn Engine Works, managed by Rev. Dr. Rutherford, was opened in August and was employing about 350 men on the nine-hour system at the end of the strike. But while the venture was a temporary success it was another tombstone for co-operative shops in engineering, as it failed after difficulties over wages and finance in 1875.[16]

The most spectacular feature of the strike was the attempt by the employers to break it by the importation of foreign workers. Efforts to secure "knobsticks" from other districts of Britain had failed since at a time of good trade the number of skilled engineers who were unemployed was negligible. Unskilled workers from London proved quite incapable of tackling the work and the Nine Hour League was able to induce the majority of them to return home.

It was in August that the employers started to introduce foreign workers into the shops. In an effort to prevent them from meeting the strikers they were lodged in the different factories and "the schools belonging to Sir William Armstrong were closed to the children and converted into barracks for the foreigner. Tenants living in Sir William's property received notice to quit if they did not return to work; the various foremen and clerks who would consent to the operation were sworn in as special constables, and preparations were made to guard the different factories much the same as if they were convict establishments."[17]

Despite the fact that violence against the foreign workers was to all intents and purposes confined to speeches, the employers used the new Criminal Law Amendment Act to intimidate the men. So wide were its terms, that one young man was fined half-a-crown for "looking at some foreigners smoking," and Margaret Monaghan, aged thirty three, got 21 days' imprisonment for "hooting," the Mayor remarking "that if women take the part of men, and he might say, would make themselves men, they could not wonder if they received the same as the men."[18]

The Nine Hour League, however, adopted effective means of ridding Newcastle of the foreigners. When the importation of foreign labour was still a rumour John Burnett was delegated to attend the Council meeting of the International Workingmen's Association in London. This body had been formed in 1864 and included on its Council not only Karl Marx but many of the leading trade unionists in Britain. More influential on the Continent than in Britain it assisted the rise of both industrial and political working-class movements.



THE ENGINEERS STRIKE AT NEWCASTLE 1871: ARRIVAL OF FOREIGN WORKERS.

The A.S.E. had not joined believing "that the best thing the foreigners could do would be to organise themselves into trade societies similar to ours and endeavour to get their wages up to the same rate as ours and then we could begin to discuss questions with them."[19] But in 1871 it was realised that the International could be of assistance to them and Mr. Cohn, the Secretary of the Danish section, was sent by the A.S.E. to dissuade Belgian workers from responding to the invitations of the Newcastle employers whose agents were posting notices in the large cities of that country. Cohn replied by counter-notices and meetings. But he was not allowed to continue his work for long. The Belgian authorities yielded to an unseen pressure and expelled him. Returning to England, he was sent to Newcastle by the A.S.E., "and by the manner in which he induced foreigners to leave Newcastle he was of great service to the cause."[20]

The work among the foreigners, despite the employers' precautions, was pursued to such effect that on August 30 occurred "a mutiny of 120 of the Germans employed in Armstrong's factory. All the efforts of the heads of the firm were insufficient to quell the disturbances; they promised that the Germans should be allowed to smoke when they chose; that in fact they should have everything but the nine hours, which the Germans had by this time begun to shout for. The Nine Hour League took advantage of this state of affairs and the next day shipped off nearly the whole of the 120 . . . amid such a scene of excitement as is seldom witnessed."[21] And at a mass meeting held on the Town Moor on September 2, "a large quantity of foreigners were on the platform expressing by signs their desire to go back to their own country."[22]

As *The Times* had predicted, the attempt of the employers to break the strike through the introduction of foreign labour ended in failure.

The tremendous achievements on the North East Coast spurred other districts on to make similar demands upon their employers. The Executive Council of the A.S.E., which had previously been very lukewarm, by November was urging other districts to secure the nine-hour day "in a firm and temperate manner . . . without strikes and lock-outs."[23] By the spring of 1872 every important district had won the nine hour day and the Clyde which had previously worked the shortest hours had achieved a 51-hour week. This victory had been gained by the West of Scotland Iron Trades Short Time League formed by union and non-union men, of which Thomas Turnbull, a member of the A.S.E., was President. In Dundee and other Scottish districts similar Leagues were formed and the 51-hour week achieved.[24] While strikes had been necessary in some instances to enforce the demands, on the whole victory had been easy and rapid. The Society was jubilant. The *Annual Report* of 1871, calling for funds in order to achieve "complete consummation of the greatest movement of our day" described 1871 as "the most eventful year of our history." On July 1 a great "collation and meeting" to celebrate the nine-hour success was held in the Crystal Palace. It was organised by a committee representing the A.S.E., the Ironfounders, the Boilermakers and the

Shipbuilders, and members of the Society were urged to bring their wives and families to the celebration. Among the guests of honour were John Burnett—now a popular figure—William Newton, and such old friends of the movement as Thomas Hughes, Thomas Brassey, and A. J. Mundella, members of Parliament who were not afraid to celebrate openly the success of the trade unions.

This victory achieved by rank-and-file engineers had great significance both inside the industry and in the wider trade union movement. For the first time all workers in the industry—apprentices and labourers as well as skilled men—benefited directly from the Society's struggle and saw the value of trade unions. Moreover, the movement with its rank-and-file character, coinciding as it did with the passage of the Trade Union Act of 1871, stimulated a general upsurge of trade unionism. Skilled workers flocked into already existing unions or formed new ones to cater for their needs. Unions began to appear in trades where there had been no organisation and pride of place was taken by the exploited agricultural workers. The A.S.E. assisted the workers in these trades and when in February, 1874, two deputations, one from the National Agricultural Labourers' Union led by Joseph Arch and the other from the Amalgamated Labourers' League of Lincoln, waited on the Council "soliciting pecuniary assistance to enable them to withstand the confederacy which had been formed from many of the aristocracy, farmers and even clergymen to stamp out the Labourers' Union,"[25] the members voted a sixpenny levy which raised £1,015 to assist the 5,000 locked-out and to "arrest the course of such tyranny."[26]

The general trade prosperity which had helped these movements continued until the middle of 1874 in the engineering industry, and with it came further demands from the engineering workers. The shortening of hours naturally raised the question of overtime payment, and alongside local moves to ensure that this was paid for the hours worked above the nine, there was also a national move to attempt to reach a degree of uniformity in the rates paid which would match the uniformity of the nine-hour system. Systematic overtime was not attacked. It was regarded as an "evil for which there seems at present to be no remedy,"[27] so attention was concentrated on the rates to be paid when it was worked rather than on its abolition. In November, 1871, a resolution on overtime passed at a meeting of London branch officers in conjunction with the Council and subsequently embodied in a national circular recommended the workmen "to insist upon each day standing on its own merits, and that time and a quarter be paid for the first two hours, and at least time and a half for all working time after the first two hours."[28]

Wages demands were also to the fore, particularly in Lancashire, and large gains were made. While strikes were more frequent than they had been in the previous twenty years, much was gained without resorting to them. At Hetherington's in Manchester the first important arbitration in engineering was undertaken in 1873 on a demand for a 2s. increase as an alternative to a threatened lock-out by the Manchester employers. The award did not give the men their full demand but increases for over a third of the men involved left them satisfied.

The Rank and File and the Executive

At a period when advance was on the order of the day, a certain amount of conflict was bound to arise between an Executive, which maintained the cautious and rigid approach which had served so well during the previous two decades, and a rank and file which saw victories to be gained by immediate action. The method of informing the Council of a dispute and awaiting its approval before action was taken proved too slow and cumbersome at a time when demands could be gained by rapid action. While Allan claimed that "an excellent understanding . . . exists between employers generally and our members" and that the A.S.E. were "fortunate in maintaining as a Trade Society our prestige for moderation"[29], he nevertheless complained in December, 1872, of "strikes occurring without sanction of the Council" and in November, 1873, strongly condemned strikes which: "have taken place not only without their [the Council's] sanction, but of which they were ignorant until they had actually transpired. This sort of conduct is much to be regretted and so obviously opposed to anything like law and order that it must be condemned by every member who will bestow one moment's reflection upon the subject. From the disregard shown to the Council's former remarks upon the impropriety as well as danger . . . of such a course of action, they feel it is necessary to go a step further in checking the abuse and that is, that it will be a question with the Council if Contingent Benefit shall be granted to our members who persist in striking or bringing about a lock-out without the Council's sanction or knowledge."

Faults were on both sides. While in favourable circumstances local struggles and strikes without reference to the position of the Society as a whole would yield results, in the long run such a policy meant the end of unity and strength gained through amalgamation.

On the other hand the outlook of Allan and the Executive on trade matters and the emphasis which had been placed on organisation and extensive benefits led one critic to say that the Society "is now as incapable to engage in a strike as the Hearts of Oak, the Foresters or any other extensive benefit society . . . It formerly combined both functions but now possesses only one, that of a benefit society . . ."[30]

Resolving the problem was not a simple task. At the 1874 Delegate Meeting in Newcastle there were indications that some of the members were beginning to realise that their organisation was not quite "so perfect in every detail" as they had thought, but only small changes were accepted by the majority. The numbers of the Executive Council and of the General Council were increased, and it was laid down that the latter body, which consisted of provincial members as well as the Executive Council, composed of London members, must meet at least once in two years in addition to being called upon when necessary. Hitherto the Executive had called this body together at its pleasure, which in practice was very infrequently. Members as well as branches were given the right to appeal to the General Council, but no alternative for the expensive Delegate Meeting—this meeting itself cost £6,996—was devised. These measures were a step towards improving the workings of the Society but only a small one. It was a change of men rather than of constitution that marked the close of this period. On the death of Allan the members, against the advice of William Newton and members of the Executive, chose John Burnett, the hero of the rank-and-file Nine Hour Movement, to be their General Secretary.

CHAPTER V

Old Methods and New Currents: 1874–1892

The years between the successes of the early 'seventies and the reorganisation of the Society in 1892 were difficult ones for the engineers. The industry grew in size and range and the corresponding growth of the Society placed a strain on its structure and organisation. Strong local organisations of employers emerged to challenge the trade policies of the Society, and many new unions catering for engineering workers were formed to challenge its right to speak for all the workers in the trade. And above all the increasing severity of economic depressions resulting from the threat to Britain's position as "workshop of the world" and the consequent unemployment among engineers and other workers made the Britain after the "great depression" a different place from the Britain of 1870.

This changing background raised problems of policy and method for the membership and the officials. Were the principles on which the Society had built and gained in strength in the previous twenty five years to be radically altered, modified or left untouched? Was the policy to be aggressive or conciliatory? Was the membership to include all engineering workers or mainly the skilled fitters and turners? Was the Executive to be a leadership or merely an administrative body leaving the effective direction and determination of policy to the Districts? Was unity against the employers to be forged through amalgamation or federation of the unions? These were some of the problems.

In the main the Society altered neither policy nor methods. While small re-adjustments in structure were undertaken and there was a tacit recognition that one of the main planks of previous policy—the contention that wages and conditions could be improved indirectly by the control of the supply of engineering labour—had to go, these adjustments were neither radical nor far-reaching. But maintenance of time-proven methods did not mean failure. Against concerted attacks by the employers the Society used its strength skilfully and fought with courage to defend successfully the nine-hour day. Wages fluctuated with trade but continuous watchfulness by District Committees led to substantial increases in the 'eighties. Except for the terrible year of 1879, the membership of the Society increased continuously from 43,150 in 1874 to 71,221 in 1891, and the increase in the number of branches from 377 to 509, with 81 of them outside the United Kingdom, indicated its spread throughout the country and its growth overseas. This progress was achieved in years when other societies, formed in the rush of union building in the early 'seventies, were disappearing like snow in the sun. Between 1872 and 1885 alone 320 such unions appeared and disappeared.

On the other hand the unwillingness to abandon or modify the principles and structure of the elaborate organisation painstakingly built by William Allan, and the failure to develop a comprehensive trade policy was responsible for some of the set-backs experienced in these years. Wages rose and fell in different areas at different times and the Society was only occasionally able to offer successful resistance when the employers decided to cut wages. Piece-work spread, but without any effective control by the Society over the conditions under which it operated, and sectional societies and demarcation disputes flourished to the detriment of all workers concerned.

The Employers Mobilise

The first sign that the gains of the 'seventies by the engineers and the trade union movement generally were not to go unchallenged and that their methods and policies were to be tested by new circumstances was the formation of the Iron Trades Employers' Association in Manchester in 1872 and of the National Federation of Associated Employers of Labour a year later. This latter body, of which John Robinson the engineering employer of Sharp Stewart & Co., Atlas Works, Manchester, was chairman in 1875, had as its objective the combination of the employers to undertake political and industrial campaigns in the same manner as the newly-formed Trades Union Congress was co-ordinating the efforts of the unions. The National Association of Factory Occupiers—which Charles Dickens called the National Association for the Mangling of Factory Operatives because of its earlier opposition to Factory Acts—joined with this new body and local associations were established all over the country. A weekly newspaper, *Capital and Labour*, was published and deputations elected to interview M.P's in order to "acquire Parliamentary influence which is indispensable if legislation is not to become restrictive and destructive in its operation upon industry."[1] But neither the degree of parliamentary "interference" with industry nor the identity of interests between different groups of employers was yet sufficiently extensive or deep to give long life to this National Federation. By the 'eighties it had disappeared, having accomplished little.

Associations confined to the engineering industry were much stronger growths. The Clyde Shipbuilders and Engineering Employers had formed an Association in 1866 and from 1872 onwards bodies were formed in many industrial centres including Liverpool, Sheffield, Bolton, Bristol and Derby. At the same time discreet but significant moves were made to win the foremen and draughtsmen in the industry to the side of the employers. In 1853 after the lock-out a few London foremen had formed the London Association of Foreman Engineers and Draughtsmen, and in 1856 a similar Association was formed in Manchester. These bodies when formed were independent of both the engineers and employers and devoted most of their time to discussion of technical questions. By the 'seventies a benefit side had been added and they competed directly with the Society for the allegiance of foremen. To assist this competition, donations from leading engineering employers figured prominently on the subscription lists for the benefit fund and no anniversary dinner was complete without the presence of some "captain of industry."[2] Independence on trade questions remained in rule, but in practice dependence on finance from the employers was almost complete.

Unity between the local employers' associations was still loose but many were connected with the powerful Manchester Iron Trades' Employers' Association and this body played the leading role for the employers. When formed it had turned for assistance to that "expert" on engineering matters, the solicitor Sidney Smith, little wiser from his struggles with the cotton operatives, the builders, and, in 1874, with the voters of London. Smith was appointed financial secretary and, with the General Secretary Edward Hutchings, issued a manifesto on the need for combination against the unions to right the injustices suffered by the employers, part of which read:

> "The legislation of recent years has withdrawn from the masters the protection which was formerly extended to them. The Combination Laws have been abolished, conspiracy in restraint of trade is no longer a penal offence, picketing has been practically legalised, the diversion of funds of benefit societies for the purpose of unionism is virtually authorised by statute and the liability of employers to their workmen for injuries inflicted by others in their employment is recognised by Parliament as a subject for legislation. So the employers can henceforth look only to themselves for mutual protection."[3]

The measures proposed to secure "mutual protection" were the old stock in trade. Use of the "Document," dismissal of Society foremen, extension of piece-work, longer hours of work, no limitation on entry to the trade and no restriction on employment of unskilled workers. All these were dressed up in keeping with the British tradition of "freedom." The readers of *The Times* were informed:

> "All in this world that a man has a right to is what he can get by fair play in the race of life. Fair play in the workshop means the freedom of contract between labour and capital."[4]

Collective bargaining was rejected to be replaced by a "free contract" between the employer and the individual worker as to his wages, conditions, and associations. The consequence of not coming to terms with the employer was the "freedom and right" of the worker to starve.

Because the Society was fighting for the right of its members to work and eat it came into conflict with the employers in their newly-formed associations and each of these conflicts raised problems of method and of policy.

The Defence of the Nine Hour Day

The first and most vigorous attack by the associated employers was launched against the nine-hour day in England and the 51-hour week in Scotland. Preliminary skirmishes took place between 1875 and 1878 on the Clyde, in Taff Vale, and in Aberdare, but in each case the Society prevented a retreat. In May, 1878 the giant North British

Railway Company in Scotland introduced a working week of 54 hours to bring the shop on to the same hours as those operated south of the border and between 1,700 and 1,800 men came out on strike. In August the Clyde Shipbuilders' and Engineers' Association, "the most resolute and arbitrary of any in the kingdom," issued a circular demanding the introduction of a 54-hour week and claiming that as:

> "the reduced hours were obtained in Scotland alone under pressure and in very exceptional circumstances, it does seem that after five years of the great disadvantage to which the trade has been subjected compared with those worked in England, the time has come when men ought to be called upon to return to 54 hours."[5]

To meet the threat a Joint Committee of the unions concerned was formed and in the hope of warding off the attack on hours the Clyde District Committee, which had been re-formed to defend the 51 hours, agreed, with the approval of the Council, to a 7½ per cent. reduction of wages. Meanwhile the North British shops had been partly filled with blacklegs and the Burntisland Branch, which covered these shops, thought the position was hopeless and allowed its members to go back to work on the longer hours. The branch was expelled from the Society for this action but the hours remained fifty four.

In December, 1878 the employers, having digested the 7½ per cent. cut, gave notice in a number of establishments in Glasgow of an extension of hours to commence in the New Year. The Glasgow District Committee decided on resistance and for two terrible months did its best to maintain fifty one hours. But the state of trade, the weather, and the fact that England was working three hours longer, militated against them and in February and March more employers lengthened hours. Non-unionists, who had to be supported by the Society, began to trickle back to work and finally, late in March, an excited meeting of the Glasgow membership, against the recommendation of the Council, decided that further resistance was hopeless. Scotland went back to fifty four hours.

Summing up the lessons of the Clyde the *Monthly Report* of April, 1879 stated:

> "That the more we concede to the Employers, the more frequent and exorbitant are their demands, and each reduction submitted to, seems but to act as an incitement to further attack. Our wisest course just now is to resist where we have the faintest chance of success."

Scotland's lesson had been learnt in England. Here the main attack started in late 1878 when Sidney Smith sent a "private and confidential" circular to all engineering associations and employers in the country, declaring that "the time has arrived . . . when the idle hours which have been unprofitably thrown away must be reclaimed to industry and profit by being directed to reproductive work"[6] and asking them to attend a conference "to arrange the preliminaries for the adoption of the resumption of 57½ hours." Luck brought the circular into Burnett's hands for a few hours, and with great initiative he quickly prepared a reply which was printed and widely circularised to the press, the employers and the branches along with a copy of the original. His speedy action directed the searchlight of public opinion on to Smith's conference, and it failed completely. No agreement was reached on a concerted attack. Instead, the attempt to lengthen hours was made locally.

The Society met the attack with vigour, declaring:

> "We believe we echo the sentiments of the engineers of Britain when we say that we value the Nine Hour System so highly that we will venture any sacrifice to maintain it . . . . In the history of unions and industries as in the lives of individuals and nations, there are times when struggle is sacred and resistance a duty . . . and if events so will it, we shall have no alternative but to fight."[7]

Nine Hour Maintenance Leagues were formed in the bigger centres, and collections taken in the shops Members in work levied themselves 7*s*. each in the year. Non-Society men coming to strike areas prepared to work the longer hours were persuaded not to blackleg and their rail fares paid back home. In desperate cases the Council authorised the offer of wage reductions rather than submission to increased hours. The most serious strikes were in Huddersfield, Barrow, Lancaster, Dewsbury and Grantham, and in Bradford one of the longest and most obstinately conducted strikes took place. In spite of the worst unemployment hitherto experienced by the Society, with the consequent drain on funds, and the bitter winter conditions, when living on 10*s*. a week was unbearable hardship, the Society and the men stood firm and one by one the employers took down their notices announcing the longer hours. Looking back on 1879 as the "darkest year in our life,"[8] when almost as much was spent on strikes as in the whole of the previous twenty six years, and expenditure was nearly twice as great as income, the engineers could say that the nine-hour system had been maintained. The victory was partly due to the division among the employers, but mainly to the clear understanding of the members and in particular of Burnett, that shorter hours were more important than money wages, and that once gained must be defended to the last breath.

The logical sequel to the successful defence of the nine-hour system was the demand for eight hours. In the 1880's propaganda by the infant Socialist movement and by the leaders of the "new unionism" among the unskilled workers, spread the idea that the workers in different trades should not act separately but together to obtain better working conditions and shorter working hours, and that instead of relying on sporadic and isolated strikes to gain improvements, use should be made of Parliament for legislation on working conditions. To the older leaders of the unions, such ideas were abhorrent. Parliament was fit only to deal with females and children and should not interfere with males. The working man was held to be too sturdy and independent to require legislation to improve his conditions. Voluntary effort by collective bargaining and strikes had reduced hours so far and could safely be left to reduce them further. In the Society were spokesmen of both schools, and in the Council the latter opinions were particularly strong. For four years there was intense discussion in the branches on the matter, but finally, in 1890, a vote of the membership showed a majority for action by Parliament, and the Society's delegates to the T.U.C. of that year were instructed to "vote for legislative action in obtaining the Eight Hour Day as an adjunct to the voluntary efforts of the working men and women of the United Kingdom."[9]

The resolution on the Eight Hour Day now backed by not only the engineers but by other craft unions, was carried, and the T.U.C. of 1890 marked the defeat of the "old" school of trade unionists by the advocates of "new unionism." Legislative action however was not an immediate possibility and little further action was taken, but the discussions were important in preparing the members for a struggle for the eight-hour day and in arousing them to the possibilities of direct working-class representation in Parliament instead of the accepted policy of lobbying and deputations.

While these discussions were proceeding a small step towards the shorter working week was taken by the engineers of the Tyne and Wear who after a strike in April, 1890, secured their demand for a "Twelve o'clock Saturday." The employers had offered a shilling a week rise if the men would withdraw this demand but the bait had failed and at the end of the following year the engineers in fifty two important centres were enjoying a longer Saturday afternoon.

Wages and the Development of a District Rate

Wages were a second subject of conflict with the associated employers and presented a major problem of policy. During the first twenty five years of the Society's existence the policy had been to control wages only indirectly by limiting hours, overtime and the supply of labour. While in some areas and shops men would be withdrawn if they were not receiving the customary rates, William Allan could inform the Royal Commissioners in 1867 that in general "We are very little concerned in regulating rates and wages. They regulate themselves if I may use the expression." But the growth of the industry, differentiation of occupations, continued unemployment and the fact that the membership of the Society no longer represented the whole trade but only between a third and a half of the skilled men, called for a new policy on wages. Direct demands on the employers were made and District Rates were fixed and enforced. The first indications of this change of policy were the strikes in 1875 in Bury, Bolton, Ashton and other Lancashire centres to bring the rates up to the Manchester District Rate of 32*s*. In 1878, the collection of details of the rates of wages paid to members throughout the country was begun in earnest and reviewed by branches and District Committees.

The trade depression of 1879, however, forced the engineers back on to the defensive and in many districts they were forced to choose between wages and hours. Sidney Smith could report after his enquiries throughout the country that employers "looked more favourably upon a movement for increasing the number of working hours than upon a general action for reducing wages,"[10] but faced with the determination of the Society to keep the nine-hour day at all costs they turned their attack on wages. In Scotland the concession of a 7½ per cent. reduction did not prevent a lengthening of hours, but in England, where in January, 1879, it could be said that "reductions of wages were an almost daily occurrence," hours were maintained. In some cases, Huddersfield and Lancaster for example, the Society itself suggested reductions in order to save the nine-hour day. It was argued by a few that a fight on both wages and hours was practicable, but the heavy outlay on Contingent and Donation benefit which had been incurred in fighting a partial battle for hours would, it was feared, be doubled in a fight on hours and wages together and would threaten the very existence of the Society.

In London a successful battle was fought on wages, and hours remained untouched. The London rate was the highest in the country and using the reductions in the provinces as an excuse some 20 of the 300 important employers in the metropolis announced drastic cuts in February, 1879. About 400 of the 5,000 members in London were involved, together with about 500 men of other unions. The firms announcing the cuts included some of the largest shops in London, Maudslay's, Humphrey Tennant's and Penn's for example, and it was clear that acceptance of the cuts in these shops would mean subsequent reductions throughout the city. The men struck work and a Joint Committee was formed which raised nearly £10,000 for the funds. The strike was long and bitter. As in the case of the nine-hour maintenance strikes which were taking place in the provinces at the same time, heavy unemployment meant an abundance of blacklegs who had no alternative but the Board of Guardians at 2*s*. a day. After five months, the strike was called off and those firms which persisted in reductions were blacklisted. The victory was not complete, but the determination shown by the men in a score of shops was a sufficient object lesson to the remaining employers to prevent further reductions.

The correctness of fighting on hours rather than on wages—where a choice was necessary—was shown within two years. In 1881 Burnett reported "that in a great many instances reductions of wages forced on us in 1878-9 have been returned,"[11] and by the end of 1882 advances were general. The nine-hour day had been maintained and wages had equalled, and in many cases improved on the 1873-1875 rates. By 1892 wage rates had been further increased in almost every District in spite of the slight set-backs in the depression of 1884-1887.

The development of direct demands on the employers for increases in wages and the growth of local employers' associations increased the importance of the District Committees. It was the District Committeemen, meeting after a long day's work in the factory, who were responsible for choosing the right moment for wage demands, formulating the policy and negotiating with the employers. On their ability and energy depended to a large extent the advances made by the membership. The Executive sitting in London surveyed the wage developments throughout the country but except in cases where assistance was requested did little to sponsor wage movements. The increased influence of District Committees led to "uniformity of wages in each District by itself,"[12] but the varying strengths of these Committees and the uneven cost of living throughout the country led to marked variations in the district rates established. The Council reported " . . . rates of wages, hours of labour and extra pay for overtime ; all these things vary in different districts and there is nothing like uniformity."[13] but instead of suggesting that steps should be taken to end the position where members in one district were rated 10*s*. or 12*s*. higher than members in another, the Council claimed " . . . for this reason a large amount of self-government must be allowed and the feelings of the district taken into consideration." Such a policy still further increased the gap between strong and weak districts.

Resistance to Payment by Results

Payment by results was the third issue of conflict and one on which an overhaul of policy was necessary. On hours and wages, it was possible for both the Council and the District Committees to pursue a flexible policy, but on piece-work the policy was laid down hard and fast by rule. The 1874 Delegate Meeting put into rule the existing practice of the Society that, except in shops where the system had been long established, no member could work by the piece. This rule made the actions of the membership throughout the country uniform, but at the same time the inflexibility of the rule involved the Society in a lot of adverse publicity and, as piece-working spread in the 'eighties, some members queried the wisdom of the rule.

The chief reasons for opposition to piece-work were similar to those put forward by the "Old Mechanics" in the first half of the century. The piece-work system as operated by piece-masters and taskmasters, with the right of the employer to alter prices at will, was the negation of good workmanship and collective bargaining and had to be vigorously opposed. When it was pointed out that these objections were to the abuse rather than to the principle of piece-work, John Burnett agreed. "But Sir," he wrote in a letter to *The Times* "these abuses have prevailed to such an extent that an experience of quarter of a century has convinced our members that a system under which the abuses which have been endured are possible, ought to be kept down to a minimum."[14]

For the industry as a whole piece-work was not yet a workable system. Only a minority of shops produced articles or possessed machines which were capable of being placed on a piece-work basis. Those which were able to introduce the system were usually the larger shops so that these conflicts attracted more attention than the actual proportion of members involved warranted.

The two disputes which received the greatest publicity were both at Erith, Kent. The first took place in 1876 at Messrs. Easton and Anderson's Ironworks where the management attempted to spread piece-work throughout the factory. The men resisted and struck work. A full dress debate in the columns of *The Times* followed, where not only the pros and cons of piece-work but also the ultimate aims of the trade union movement were discussed. *The Examiner*, the *Weekly Dispatch* and the *Manchester Guardian* all supported the men but after a protracted struggle the management got their way.

The second dispute was in 1889 at Maxim-Nordenfelt's Gun and Ammunition factory. The conditions were slightly different. It was a large-scale factory and the management sought to extend the piece-work which already existed in a number of departments. The resulting strike was as much against the price-cutting in the shops already working piece-work as against the further introduction of the system. On December 4, 1889, Robert Austin, General Secretary of the Society, in a long letter in *The Times* stated:

> "That gentleman [Thomas Nordenfelt] not only claimed the right to fix the prices to be paid for any class of work . . . but he also claimed the right to reduce the prices which he himself had fixed . . . solely because the man by his intellect, strength, and ability earned more than time and a half on the job. Is there any justice in this, and is this a system we should try to extend?"

The strike was well conducted. Not only did the skilled men of different unions come out but the labourers belonging to the new Gas Workers' Union stopped work and for the first time all shop foremen, old and young, were withdrawn by their societies. But again, in spite of good publicity and handsome subscriptions, the men failed to win their case and after ten months' fierce struggle had to return defeated.

While there is no doubt that the determined opposition of the Society to all forms of piece-work both delayed its introduction in many firms and eliminated some of the abuses of the piece-master system, the failure to win pitched battles with the employers over the issue and the rigidity of the rule which applied equally to "fair" or "unfair" systems of payment by results, led many members to seek a revision. When a strike over piece-work could be described as "one of those cases where success was most unlikely but one in which the rule left no other alternative than resistance," as with a strike at the York shops of the North Eastern Railway Company in 1881, it appeared that the rule which invited this waste of money and energy needed closer investigation.

Resolutions were moved at the General Council meetings in 1878 and 1888 and at the Delegate Meeting of 1885 asking for alterations but in each case were defeated. In principle all were agreed that time-work was preferable to piece-work, but the minority suggested that reality should be faced and that instead of losing shops and members by opposing piece-work root and branch, rules should be drawn up to control its operation for the benefit of those members forced to work it. The appeals fell on deaf ears and by the 'nineties, with the introduction of further technical changes, the rule was not only failing to prevent the introduction of piece-work but, since Society members were withdrawn from those shops where it was appearing, was also giving the employer an almost free hand to practice the worst evils of the system.

Entrance to the Trade

Another major conflict with the employers took place over the right of entry to the trade. Although the Delegate Meeting of 1852 had expunged from the rules all reference to the proportion of apprentices to journeymen permissible, the policy of limitation of the number of apprentices, and therefore of the number of new entrants, had remained a keystone of the general wages policy of the Society and it had not been unsuccessful. With the gradual change to a direct wages policy this problem would have fallen into the background but for two factors. One was the policy of kindred unions in the engineering and shipbuilding industry and the other was the growing percentage of unemployed engineers. The Boilermakers and Iron and Steel Shipbuilders' Society, and the Shipwrights' Society maintained a strict policy of limitation, and due partly to the closely-knit character of the shipbuilding industry compared with the widening spheres of engineering, were able to practice it effectively. This could only have one result ; an increase in the number of lads in the engineering shops. In Cork, for example, in 1883; when the Boilermakers objected to the number of lads in their shop, the management promptly shifted the lads to the fitting shop where they outnumbered the journeymen by six to five. With reason the engineers said "either the apprentice system should be open to all, or all trades must restrict if only in self defence."[15] But the boilermakers and shipwrights had their own logic and because they were not prepared to forego their advantage, the engineers had to consider "self-defence."

The increasing number of members who even in the best years were unable to find a job was a second reason for self-defence. Sons were obtaining jobs whilst fathers were signing the Vacant Book, and the increasing insecurity of employment was held by the Society to indicate over-population of the trade. In discussions with the employers on wage demands the number of unemployed engineers figured prominently in the decisions to advance or reduce wages.

It was in this background that the Sunderland members, taking the initative as they had done on the Nine Hour Movement, challenged the employers on the limitation of apprentices. On June 7, 1883, they asked the Sunderland employers to confine apprenticeship to youths aged sixteen years and under, and to limit the number to one apprentice for every two bonafide journeyman on the grounds that, "owing to other trades restricting apprentices, our trade is being resorted to by a proportion of apprentices which far exceeds the proportion in any other trade."[16] This demand was backed by illustrations showing that in one shop in Sunderland there were twenty three journeymen and thirty seven apprentices employed, in another twenty five men and fifty four apprentices, and in seven leading shops there were nearly five hundred apprentices to seven hundred men. A proportion of one to two could not, in these circumstances, nor in the light of the Boilermakers' rule of one apprentice to five journeymen be described as an extravagant demand. Wage demands put forward at the same time were conceded by the employers but they would not move on the apprenticeship demand. The men, declaring that they were "prepared to sacrifice part of the advance of wages rather than give up their position on the point of apprentices . .[17] struck work on June 21st. In October when it became apparent that the strike was to be long and drawn-out, a meeting of the men was held to discuss policy but only forty of some six hundred votes cast were in favour of waiving the demand on apprentices. Trade declined rapidly—the shipping tonnage built in Great Britain fell by nearly a half, from 1,250,000 tons in 1883 to 730,000 tons in 1884—and doubts were expressed by other Districts as to the wisdom of continuing the struggle. But the men stood firm and it was not until May, 1885, after nearly two years of resistance, that the Council ordered the men to return to work "in any shops where they can obtain it."[18] Nearly £100,000 was spent on the strike in benefits and grants but the net result was the virtual annihilation of the Sunderland branches and the abandonment of large-scale attempts to limit apprentices. A sound policy and plenty of courage was not enough by itself ; the engineers of Sunderland were defeated by lack of leadership in choosing the time to strike and tactics to be pursued as much as by the superior strength of the employers.

The Fight for Jobs : Demarcation

The differentiation of trades within the engineering industry arising with the development of special tools for particular ranges of work and the allocation to the fitter, turner, smith and patternmaker of jobs previously performed by one skilled craftsman—usually the millwright—were in the main straightforward. But in an industry as continuously affected by technical change and unemployment as engineering, there was bound to be a certain amount of conflict over the allocation of borderline, or new, jobs which could be performed by workers of several trades. This conflict took two forms ; the one between the skilled and less skilled workers ; the other between workers in different skilled occupations.

The conflict between the skilled and the less skilled worker was of minor importance in these years. Where it did develop it was more often due to the attitude of the skilled mechanics "considering themselves above working at lathes at which certain kinds of work are done,"[17] for example repairs and "dirty" work, and the passing of these jobs to labourers, than to any serious challenge. The skill needed for the majority of jobs and the superiority of organisation and numbers of the craftsmen prevented the employers experimenting on a large scale with less skilled labour.

The conflict between the workers in different skilled trades became increasingly important. Where the men were members of the same union the demarcation of jobs could be solved without difficulty. The unifying influence of the A.S.E., and the relatively small change of methods and machines in the engineering industry proper, kept disputes in this section to a minimum. In shipbuilding, on the other hand, the rapid changes in the methods of construction, in the character of the ships built, and the absence of an all-embracing trade union, combined to make the industry the chief field for demarcation disputes.

Starting with disputes on the construction of the ships between the boilermakers and their "wooden enemies" the shipwrights, the conflict had passed by the 'eighties to the fitting and equipping of the vessels. With the tremendous increase in the amount of work done on board, the A.S.E. fitters were directly involved in conflicts with shipwrights, boilermakers, ship's plumbers and carpenters. While marine engines, as such, were recognized as engineers' work, and "a boiler's a boiler to be made by boilermakers," the erecting and fitting of ship's valves, pumps, sluices, water-tight doors was new work claimed in part by all trades.

The state of relations between the A.S.E. and other unions in shipbuilding areas can only adequately be described as running warfare. The climax in "these most miserable of all disputes" was reached in 1891 on the North East Coast. A dispute between plumbers and Society fitters over the fitting of two-and-a-half-inch piping had been temporarily settled for this area by an agreement in June, 1890. A year and a half later, after a disturbed truce, the fitters at Palmer's Yard, Jarrow, claimed that the agreement was inoperative due to the composition of the Court of Award and struck work against certain jobs being given to plumbers. The employers replied by locking out 5,000 engineers on the Tyne, while the plumbers remained at work. After three months' resistance, the engineers had to return on the employers' terms and the plumbers kept the jobs. Neither the plumbers nor the fitters gained from this conflict. The employers had been quick to take advantage of the rivalry between skilled workers, and quite naturally the general public failed to see that the fitting of a two-and-a-half-inch pipe was a sufficient reason for a stoppage of work over the whole North East Coast. As the largest Society involved in this and other disputes, the A.S.E. not only tended to suffer more at the hands of the employers but received the lion's share of public condemnation.

Sectional Societies and Federation

These demarcation disputes and some of the failures on trade problems underlined for the Society the importance of amalgamation and federation. The spread of the engineering industry and the growing differentiation between trades had led to the growth of some unions catering for the same trades as the A.S.E. and of others catering for skilled workers on the borderline of engineering proper. The position was further complicated by the formation of yet more unions which were recruiting both semi-skilled and unskilled engineering workers.

The most important of the unions catering for the same trades as the A.S.E., were the Steam Engine Makers' Society which grew slowly but steadily from over 1,000 at the time of the Amalgamation in 1851 to 6,000 in 1892; the Associated Blacksmiths of Scotland which numbered some 2,500 in the 'nineties; the United Pattern Makers' Association, founded in 1872, with 38 members rising to 2,500 by 1892;

and the National Society of Amalgamated Brassworkers founded in 1872, indicating the growing use of this material, numbered 6,500 in 1892; similarly the United Journeymen Brassfounders' Association of Great Britain and Ireland, founded in 1866, grew to 2,500 members in the 'nineties. These societies were national, or nearly so, in extent and influence. In addition there was an almost endless list of specialised unions of a local nature catering for particular classes of engineers.

These unions were pigmies beside the A.S.E. and their separate memberships added together represented not much more than one quarter of the A.S.E. membership. Nevertheless in some shops and ocalities and in certain occupations, they outnumbered A.S.E. members. Their attraction for many engineers came from their compactness and specialisation on the problems of particular trades. It took far more than general references to the spirit and strength of amalgamation to convince many smiths or patternmakers that their interests would not be better served in a Society composed entirely of those trades, rather than in a large Society in which they were hopelessly outnumbered.

The A.S.E. attempted to meet this threat to unity among the engineers in varying ways. At times they declared war to the knife, as with the Patternmakers in 1885; at others they offered the olive branch of friendship, as with the Steam Engine Makers in 1888. Mutual Aid societies of patternmakers and smiths were encouraged within the Society so that these members could not complain of neglect of their interests, and at the 1885 Delegate Meeting, the entry to the Society was widened to include some of the newer skilled workers such as brassfinishers, slotters and coppersmiths. But none of these methods were successful in retarding the growth of sectional societies, or in eliminating the bitter local quarrels which accompanied this growth. The remedies did not probe to the heart of the matter. While the trade policy of the Society remained on an "ad hoc" basis, except for the defence of the nine-hour system, the more limited but definite objectives of the local and sectional societies appeared attractive and while both the organisation of the employers and the character of negotiations remained local, there appeared little need, except on major issues, for a powerful and wealthy national organisation. Until the A.S.E. developed a nationally co-ordinated trade policy, existence of the sectional societies was inevitable.

The survival and growth of these sectional societies added to the larger problem of unity between the workers in all sections of the engineering and shipbuilding trades. The Boilermakers, Iron Moulders, Founders and Shipwrights were not competitors with the A.S.E. in that they did not recruit workers of the same trade, but the fact that in many cases the members had the same employers, worked the same hours and suffered wage fluctuations together, gave them many vital interests in common, and as complete amalgamation was thought to be impossible, efforts were turned to joint committees and federation.

Joint committees were successful in many localities on specific issues. An outstanding example was the Committee in London in 1879 in defence of wages, and similar bodies were formed around the Nine Hour Maintenance Leagues. But in no case were the bodies permanent, nor did they secure the official endorsement of the various Executives. In 1875, fresh from the victories of the nine-hour struggles which almost everywhere had been conducted jointly, an attempt was made by the Executives of the various unions to consolidate this unity by federation. "In these times" read an address by the Boilermakers, Steam Engine Makers, Ironfounders and A.S.E. to their members, "it would be a fatuity almost approaching the character of a social crime, to stand in solid isolation" and the address proceeded to outline proposals for a Joint Reserve Fund between the four unions "to resist encroachments on the Nine Hour System."[20] But well-chosen words alone were not sufficient to prevent disagreement on details and the scheme remained on paper. Not until 1890, when new forces in the trade union movement were building new unions and urging closer unity among the older ones was the issue raised again in a practical form. The Council of the A.S.E., knowing too well the damage the engineers had suffered in demarcation disputes and in conflicts with the employers by lack of unity, called a meeting of delegates of various unions in the engineering and shipbuilding trades to consider federation. Some agreement was reached, but the internecine struggles of the unions in the previous twenty years had left deep scars on the memories of some engineers. When the branches discussed the proposals, more time was spent on remembering the inevitable stories of questionable tactics by other unions in past disputes than on discussing the advantages of unity in the ranks, and the Council decided to let the matter drop, passing the responsibility on to the Delegate Meeting.

The other Societies, under the influence of Robert Knight, the Secretary of the Boilermakers, finished the work the A.S.E. had started, and in 1891 the Federation of Engineering and Shipbuilding Trades of the United Kingdom was formed. Without the A.S.E., this Federation was weak, but it represented the biggest step toward the unity of engineering and shipbuilding workers that had been taken since 1851. The failure of the A.S.E. to participate in this move, like the failure to develop the unity of all sections of the engineering workers within the framework of the Society, was a reflection of a policy and structure which no longer corresponded with the changing conditions in the industry and new spirit in the country. The harvest of these mistakes was reaped in the following ten years.

The A.S.E. in the Labour Movement

In its relations with other trades and its attitude towards parliamentary action, the leadership of the A.S.E. was content to carry on the traditions which Allan had established during the first twenty five years of the Society's existence.

When the funds of the Society permitted, generous assistance was given to other trade societies. In 1875 over £3,000 was donated, £1,000 of which went to the Plimsoll Fund for Merchant Seamen, and

£1,000 to South Wales colliers. In 1882, French textile operatives, Belgian cigar makers and New York masons were among the recipients of grants, and in the following years French potters and San Francisco printers also benefited. £11,446 was granted to other trades between 1886 and 1892, including £670 to the London dockers' strike of 1889, £1,500 to German printers and a total of £3,960 to Australasian Unions.

On the Parliamentary Committee of the T.U.C., Burnett replaced Allan as treasurer, and he viewed his own functions and those of the Committee in very much the same light as his predecessor had done. After the passage of the Trade Union Act in 1876, the Parliamentary Committee confined its activities to pressure on Parliament for certain very minor reforms no further advanced than the programmes of Gladstone and the more radical wing of the Liberal Party. Adopting the Liberal doctrine of economic individualism, it took up only under pressure the demands of various trade unions for legislative measures to ensure minimum conditions in different industries. It resisted above all the growing socialist ideology of the 1880's, the rising demand for a working-class political party and such measures as Land Nationalisation and the Eight Hour Day.

While Burnett could make constant and undoubtedly sincere pleas for the working man to "exercise more social and political influence"[21] he conceived this influence in terms of bolstering up the progressive measures of the Liberal Party. He had no vision of creating that independent working-class programme and leadership which was becoming increasingly necessary as "the unemployed" became an important political problem, and as the unskilled workers began to demand a higher standard of life. It was not surprising, therefore, that the A.S.E. should lose the leadership of the trade union movement which it had held during the first twenty five years of its existence. William Allan had taught the whole movement the value and necessity of stable and efficient organisation, of allies among the middle classes and of unity in the place of numerous local clubs. In the 1880's it was the socialists and the leaders of the "new" unions—some of whom were rank-and-file members of the A.S.E., John Burns and Tom Mann being the most prominent—who were organising and directing the working-class movement towards the next stage in its progress.

The strikes of 1889 among the dockers and gas workers and the success of these strikes reverberated throughout the world. Almost overnight the general public discovered that Victorian prosperity had not spread to all classes, that the "submerged" classes were human, willing and, with assistance, able to stand up for their rights as effectively as any of the skilled workers. Trade unionists from Britain to Australia and America discovered a new meaning of the word solidarity, and a new concept of the aims of a trade union. As the leading union in the country, and with many of its members involved in this new movement, the A.S.E. could not ignore these trends.

In November, 1889, a strike of labourers at Silver's, in Silvertown in the East End of London, where 27 members of the A.S.E. were employed, confronted the Council with a problem not previously encountered. Were they to withdraw their skilled members to assist the unskilled labourers? Heated discussions took place both inside and outside the Society on the policy to be pursued, and the Committee appointed to examine the facts of the case posed clearly the problem confronting the Society:

> "Looking at the matter then from a purely practical point of view our cue is to remain neutral. And inasmuch as the primary duty of the the Council is to look after the interests of our Society and its members this may be thought to have settled the matter. But in the light of the new general aims and methods now obtaining . . . how far this practical but exclusive policy is applicable is to be questioned. Are we, or are we not prepared to march with the times and sacrifice our interests at one point in return for the support of bodies of men at other points who have nothing to gain by supporting us?"[23]

To these questions, as to so many other problems calling for new tactics and new policies, the Council failed to give a clear answer. They concluded their walk on the Silvertown tight-rope by keeping their members at work, giving £50 to the striking labourers and making an offer to the Management to act as arbitrators on the dispute.

Internal Problems and Defects

The shortcomings of the A.S.E. between 1875 and 1890 were due to many factors. Conservatism of the leadership, unwillingness to alter policy, methods or organisation which had served well under different circumstances, a growing unwieldiness of the expanding Society, and the rigidity and exclusiveness of its structure, combined to weaken the role which the A.S.E. could play in the leadership of the workers of the engineering trades, and the broader movement.

It was primarily the top-heavy organisation of the Society and the absence of adequate links between the leadership and the branch members which accounted for the weakness in its trade policy. The role of the General Secretary was one of general factotum. Overwhelmed by secretarial work, which increased as the Society and the problems grew, neither Burnett, nor Robert Austin who succeeded him, could devote the time or attention required to evolve a general policy in keeping with the times.

All the correspondence from the three hundred odd branches and District Committees, the compilation of annual, quarterly and monthly reports, the minutes and abstracts of the Council's proceedings, attendance at Council Meetings two or three times a week, representing the Society on the Parliamentary Committee and on numerous other bodies and occasions, visits to districts where trouble was brewing, supervision of all the accounts and the clerical and packing work at the Office, were the work of the General Secretary, aided by only two assistants and an office staff of one. Faced with this mass of routine business it was not surprising that the General Secretary, however enterprising, should come to look at efficiency in business matters and the fate of the accumulated funds as the most important function of the leadership, and that he should show a growing resentment of any unorthodox or spontaneous activities on the part of branches which tended to upset the nicely planned routine.

The Executive Council—known as the Local Council—was no more effective in giving the required leadership. Both its composition and the nature of its deliberations militated against the vision necessary to pursue a successful policy. It was still formed exclusively of delegates from the London branches, who besides working at their trade all day often held onerous branch positions as well. By decision of the 1874 Delegate Meeting, its members had been increased to thirteen, but a mere increase in numbers did not give increased efficiency, and at the following Delegate Meeting in 1885 they were reduced to nine. The method of electing the Local Council exclusively from the London branches—a hangover from the "acting" branch of primitive trade union organisation—could not lead to full confidence between the leadership and the members of a union numbering thousands, nearly 90 per cent. of whom were outside London. The doubts as to the value of this type of organisation were most forcibly expressed by the Erith strikers of 1889 who complained of the lack of support from and leadership of the Council and concluded by asking: "How long, oh, how long are the affairs of a huge organisation of 63,000 members to be dominated by nine Metropolitans of such passing wisdom?"[23]

The General Executive Council—the more representative body—by decision of the Delegate Meeting of 1885, was required to meet only once in every three years instead of two, and in the seventeen years from 1875 to 1891 only one Delegate Meeting—the highest authority in the Society—was called. The General Executive Council, as might be expected, could quarrel little with the mass of detailed decisions taken by the Local Council, but many branches and individuals did appeal successfully to it against decisions of the Local Council.

Closely linked with defects in the composition of the Local Council was the nature of its deliberations. In 1876, Burnett excused the paucity of the Council's report of its activities to "the amount of routine business transacted being heavy due to the large number of benevolent grants to be discussed." In the following year he again admitted "the run on the Benevolent Fund has been the great cause of work of the Council." In 1877, there had been an average of seventeen applications for benevolent grants discussed each night, taking approximately four minutes each. Council meetings had a time-limit of two hours, which left exactly thirty five minutes for other business, including other financial matters, all correspondence from branches, decisions on superannuation grants, awards of accident benefits, the reports of District Committees, appeals from members against branch decisions, reports from the Parliamentary Committee, deputations from other unions soliciting financial help in their struggles, and discussion of strikes then pending. It was not surprising that even with an extension to three-hourly meetings, the Council could not give leadership on the major trade questions, and that on many occasions it was out of touch with the feeling in the branches throughout the country. While tribute must be paid to the members of the Council who devoted to the Society the whole of their spare time after working hours—in 1890, for example, they met two hundred and sixty seven times in sessions of between two and three hours in the evenings, in addition to twenty two day meetings—their devotion alone could not overcome the structural weakness in the Society.

These weaknesses were not ignored, but the remedies adopted from time to time were always such that they left the main structure and organisation of the Society intact. An example of this policy was the appointment in 1882 of a third assistant Secretary—John Anderson of Manchester—and the decision in 1891 to elect a fourth. Where other unions, notably the Boilermakers, were concentrating on organisers in the districts in order that trade problems could be handled with speed and cohesion by a body of experts working under the general direction of the Executive, the A.S.E. was taking leaders away from their districts to cope with purely secretarial and financial work for which they were not necessarily fitted. This and other adjustments magnified rather than solved the problem.

John Burnett

When John Burnett stepped into William Allan's shoes in 1874 he had a difficult task in front of him. Allan had established a standard of efficiency which would test the ablest man and the rank and file who elected Burnett expected a more militant trade policy than that followed by Allan. He fulfilled neither task completely. While one man cannot be blamed for the overburdening of the Local Council with routine matters and the lack of leadership to districts on trade matters, it was Burnett who saw the problems most clearly and with him lay the responsibility for advocating a re-organisation before the Society was strangled. But instead, with creditable though wasted energy, he struggled on, content to keep the accounts and the reports up to date. On trade policy, it was Burnett who saw the total picture of the confusion and conflicts of the different districts, but except for the successful defence of the nine-hour day which was inspired by him, few attempts were made by the General Office to exert a unifying influence.

When Burnett accepted an invitation to fill the newly-created post of Labour Correspondent of the Board of Trade in 1886, the Society lost a loyal member of outstanding literary and organisational ability. Only a man with these qualities could have held the Society together and added to its membership when its structure and policy was becoming a bigger and bigger obstacle to progress. His exchange of the Office in Stamford Street for greater comfort at the Board of Trade was for Burnett a perfectly logical step and for the membership of the Society a valuable lesson. From the militant blacksmith of the Nine Hour Strike, when without any real organisation or funds he inspired men and women to challenge the mighty Armstrong, Burnett had become an election campaigner for Gladstone and the Liberal Party, the apologist for trade unions with friendly benefits claiming that "no stronger barrier to social revolution exists,"[24] and the advocate of "the board of green cloth" around which conflicting interests could be shown to be identical. A post under a Liberal President of the Board of Trade to promote labour conciliation was no wrench with his past.

On Burnett's resignation the membership could see only too clearly the shortcomings of the Society's structure and policy, which had been partially concealed by his personal brilliance. In his last report in 1886, Burnett himself placed the problem before them. "Policies and practices," he wrote," that suited the conditions of things forty years ago cannot do so now; and instead of clinging in blind tenacity to traditions, we must remodel the Society where such is required."[25]

He did not stay to assist in this "re-modelling" nor did it take place under his immediate successor, Robert Austin. Joining the "Old Mechanics" in 1847, assisting in the Amalgamation of 1851, filling the position of Manchester Vacant Book keeper since 1863, Robert Austin had become almost a legendary figure in the Society and brought to the General Office little more than a reputation for honesty and devotion to the Society. Cautious and traditional in both political and industrial affairs he did his best, in a changing industry and a changing Britain, to keep the Society on the path laid down by Allan forty years earlier.

Signs of the Times

Respect for Austin's long service to the Society could not and did not prevent a growing restlessness and demand for change. The economic insecurity of the present and the apparent lack of prospects in the future, which were the main characteristics of the "Great Depression" for the workers, made a new outlook essential. Young engineers, themselves a privileged section, saw about them the appalling poverty among the families of the unskilled labourers in the slums of the great cities, they read such works as Henry George's "Progress and Poverty" which attributed the great social evils to the private ownership of land, they heard the propaganda of Hyndman's Social Democratic Federation which taught that not until labour had overthrown the capitalist system would it free itself from poverty and bondage. And it was two young engineers—John Burns and Tom Mann—who became outstanding representatives of the new ideas and led the cry for a new outlook.

John Burns, born in Battersea in 1859, joined the West London branch of the A.S.E. twenty years later. At the age of 23 he was one of the most prominent working-class propagandists for the Social Democratic Federation and in 1885 received 598 votes when he stood as Socialist candidate in West Nottingham. In the following two years he became one of the best known figures in the labour movement for his leadership of the London unemployed. He showed his courage by breaking through the police cordon at a prohibited demonstration in Trafalgar Square in 1887, on what has since been called "Bloody Sunday" and was sentenced to six weeks' imprisonment. In 1889 he played a prominent part in the London Dockers' strike and in the same year was elected to the London County Council. Three years later the workers of Battersea returned him as their Member of Parliament with a substantial majority.

Tom Mann, born at Foleshill, Coventry, in 1856, joined the A.S.E. in 1881 when he came to London. After a short period in the United States, he returned to England and joined the Social Democratic Federation in 1884 at Battersea. In 1887, he left his work as a turner and took up a precarious existence as propagandist for the Social Democratic Federation, mostly in Lancashire and on the Tyne. With John Burns, he played a great part in the docker's strike of 1889 and as a result was elected President of the Dockers' Union formed out of the struggle. From 1889 to 1891, he devoted his energy to organising the Dockers' Union. But while a social conscience would let neither Tom Mann nor John Burns rest from work among the unorganised workers, they were both active and loyal members of the A.S.E. and agitated within the ranks of the Society for reforms that would not only improve the organisational framework but also fit the A.S.E. to give the leadership to the trade union movement of which it was inherently capable and historically fitted.

Both Mann and Burns strongly attacked the conservatism and lack of fight of the old trade unionism. Their impatience with the leadership was well expressed by Tom Mann in 1866:

> "None of the important societies have any policy other than that of endeavouring to keep wages from falling. The true Unionist policy of *aggression* seems entirely lost sight of; in fact, the average Unionist of to-day is a man with a fossilised intellect, either hopelessly apathetic, or supporting a policy that plays directly into the hands of the capitalist exploiter . . . I take my share of the work of the Trade Union to which I belong; but I candidly confess that unless it shows more vigour at the present time, I shall be compelled to take the view—against my will—that to continue to spend time over the ordinary squabble-investigating, do-nothing policy will be an unjustifiable waste of one's energies. I am sure there are thousands of others in my state of mind."[26]

John Burns claimed that

> "Their reckless assumption of the duties and responsibilities that only the State or whole community can discharge, in the nature of sick and superannuation benefits at the instance of the middle class, is crushing out the larger Unions by taxing their members to an unbearable extent. This so cripples them that the fear of being unable to discharge their friendly society liabilities often makes them submit to encroachments by the masters without protest."[27]

The energy and forcefulness of these two men and a growing number of other members gradually began to take effect. Whereas at the 1885 Delegate Meeting, John Burns, the youngest delegate present, had not been able to secure a seconder for his resolution to run Parliamentary candidates, by 1889, many branches were passing resolutions in favour of direct and independent political activity by the Society.

But it was Tom Mann who rallied around him the young forces in the A.S.E. who were seeking to increase the militancy and effectiveness of the Society. From 1888, he had found time to address recruiting meetings for A.S.E. branches up and down the country as well as carrying out his main job as organiser of the Dockers' Union, and in 1891, on the death of Robert Austin, he decided to relinquish this work and stand for General Secretaryship of the A.S.E.

His main opponent in the election was John Anderson who had been one of the Assistant General Secretaries since 1883, and the conflict between these two personalities reflected the difference in outlook and policy of the conservative elements and those who wished to make a decisive break with the past. It was not merely the most hotly contested election ever held in the Society, it also excited wide interest in the broader labour movement and the press. For the first time both candidates addressed meetings up and down the country and members in different localities, formed election committees to support their candidate. The powerful London Committee in support of Tom Mann, had George Barnes as its Secretary.

When the votes were finally counted, Anderson secured 18,102, Mann 17,152, and Glennie—the third candidate—738. Over 50 per cent. of the membership had voted—by far the largest vote ever cast. In his letter of thanks to those who had voted for him, Mann said :

> "I entered the contest in the hope of assisting others in stimulating some of the latent energies of our members to increased activity."

That his candidature had partly achieved its object, and had served to rally and unite the forces in the Society making for change, can be seen from the radical alterations made in the rules and structure of the Society at the Delegate Meeting held in 1892.

But before describing these changes and the events of the succeeding years which opened a new era in the development of the Society, a picture of the rapidly changing background in which these events took place and which directly influenced their operation, must be briefly sketched.

PART THREE: 1892–1920

THE AMALGAMATED SOCIETY OF ENGINEERS IN A CHANGED BRITAIN AND A CHANGING INDUSTRY

INTRODUCTION

The Industry, the Tools and the Engineer, 1892-1920

The transition from the prosperity of the Victorian Age with its relatively simple problems to the complicated trials and conflicts, nation-deep and internationally wide, of the twentieth century was more abrupt than many contemporaries expected. The change was also complete. The fields of Flanders, the events in Petrograd and the discussions at Versailles made the dreamiest of wishful-thinkers realise that return to the old conditions was impossible. This speed and thoroughness put the social institutions of workers, employers, and the nation as a whole to a severe test. The degree to which the methods, policy and outlook of these institutions, be they trade union, business unit or the State itself, kept pace with technical and economic development and the logical consequences of those developments, tended to determine their achievements and failures, their survival and expansion.

On some counts, such as unemployment, export trade and the incidence of industrial crises, the trends appeared to vary only slightly in these thirty years from those of the previous three decades. Exports in the good years continued to rise, unemployment in both good and bad years was more widespread, and no ingenuity was able to prevent recurring crises. But this apparent continuity concealed a very deep change in the economic structure of Britain and her place in world economy.

From her position of workshop of the world Britain became surrounded by rivals as able, and in some respects more able, with whom she had to compete in every corner of the globe. From a country inclined to dub colonies as "millstones," Britain led the mad scramble for territory, spheres of influence and trade rights ; and to maintain and protect an Empire of over 370 million persons, representing markets, cheap labour, investments and raw materials, the lives of the rising generation were destroyed or mortgaged. From an economy preaching and practising private enterprise and competition, Britain's traditional free-trade policy was seriously threatened and her industrial structure became increasingly dominated by giant limited liability companies, cartels and associations against whom competition was virtual suicide. In place of the hope that the opposing interests of the two classes of the "hungry 'forties" would dissolve into one as a result of economic progress and expansion—a hope encouraged by the apparent indentity of policy between the working-class organisations and the Liberals—there emerged, by 1914, the reality of an independent working-class political party and a wider gap than ever between the property owners and the working class. Finally, laisser-faire was replaced by State intervention in one field after another culminating in all round control during the war of 1914-18.

The engineering industry in these years reflected both the apparent continuity and the changes, and in addition it faced a series of technical developments which increased and complicated the problems of adjustment and transition.

The numbers employed in the engineering and shipbuilding industries continued to grow. By 1901 the numbers in these and kindred industries had risen to 1,447,000 compared with 1,094,000 in 1891, and by 1911 the number employed reached 1,773,000. A tremendous expansion took place during 1914-18 and in 1921 after most of the war-time visitors had left, the number stood at 2,491,000. It was an increase offering great opportunities for recruitment to the engineering trade unions but at the same time equally great problems of organisation and policy.

The value of the goods produced by these workers increased even faster. No figures are available for the total production of the industry, but exports, which in 1907 represented approximately one half of the total value of production,[1] rose from an average of £12.1 million in 1889-1893, with a peak in 1892 of £15.2 million, to an average of £32.3 million in 1909-1913 with a peak in 1913 of £37.0 million. Great as was this increase it was not, however, sufficient to maintain the absolute leadership which Britain had previously held in engineering and shipbuilding products. America and Germany had increased their production and exports at an even greater rate than Britain. In shipbuilding, for example, Britain was building 82 per cent. of the gross merchant tonnage launched in the entire world in the years 1892-94, but in the years 1911-13, although there had been a large increase in British shipbuilding, the proportion had dropped to 62 per cent. of the total launched.[2] This change in the relative position of British industry in a world dominated by commercial and economic rivalry had far-reaching consequences. In negotiations it gave the employers ammunition to support their cry of "foreign competition" which they had used since 1850 as a reason for lowering wages and conditions. But more important it led directly and indirectly to the world-wide conflict of 1914-1918.

Trade-cycle fluctuations continued to be marked in the engineering industries. In 1893-4, 1903-4, and particularly in 1908-9 contraction of employment and production in other industries was followed by short-time, unemployment and in some cases failures of firms in the engineering industry. Those workers remaining in employment were asked by the employers to help tide over the depression by cuts in wages or a sacrifice of an advance obtained two or three years earlier. How wage cuts were to assist in removing a depression which had started in the industries producing goods bought by wage earners was never made clear, but how to resist wage cuts in a depression, when increasing numbers of unemployed were on the books of the Society and the drain on funds was heavy was equally a problem which had not been effectively solved, with the result that wage cuts, however illogically, did accompany every depression.

In the three depressions the Society had an average of five thousand five hundred, five thousand and eleven thousand members unemployed.

But more serious was the continued presence of unemployment in periods of good trade. Only once in the years between 1892 and 1914 did the number of unemployed engineers fall below two per cent. of the total membership, and in the year 1913, when the industry was experiencing one of the greatest booms in its history there were over two thousand skilled members "not wanted." In war alone could the industry use to the full the skill of all the engineers. As a whole the metal industries, engineering, shipbuilding and iron and steel, continued to be harder hit by unemployment than the average of all industries. Between 1880 and 1890 unemployment in metals had been twenty six per cent. higher than in all industries and between 1900 and 1910 it was forty per cent. higher.[3] The existence of a persistent number of unemployed in the industry and the increasing insecurity of employment in times of economic crisis called for some modification of the policy of donation-benefit which had originated as a defence against wage cutting and as a help to members in times of temporary industrial maladjustment.

In these four factors—the continued growth of the industry, the increase of exports, the recurrence of crises and the additions to the numbers unable to find regular employment—the trends of the previous years were continued between 1890 and 1914. Marked changes took place in other aspects of the industry.

Changes in the Products, Specialisation and Standardisation

A noticeable change occurred in the products of the industry. Textile, agricultural and mining machinery, steam engines (locomotives and others) and marine engineering remained the chief products of the industry but an important development took place in the last-named section and two new sections, electrical machinery and motor cars, slowly, but significantly, increased in size. The demands of war weighted them still further as against the older established sections.

The development in marine engineering and shipbuilding was two-fold. Sir Charles Parson's ship "Turbinia" in racing up and down the staid lines of warships drawn up at Spithead to celebrate Queen Victoria's Diamond Jubilee in 1897, marked the first stage in the subsequent replacement of the reciprocating engine by the turbine as the prime mover in ships. The replacement was rapid. In 1904 the Admiralty ceased ordering reciprocating engines for warships; by 1914 the triumph of the turbine in large vessels was complete. The second development was in the spectacular increase in the tonnage of the ships built and in the degree of specialisation. Luxurious passenger liners such as the S.S. "Lusitania" and S.S. "Titanic" on the one hand, and special purpose refrigerated ships, colliers, oil tankers on the other, made the equipment of the ship almost as important an operation as the construction of the hull. The engineers played an important role in effecting the developments in marine engineering and shipbuilding, but the technical advances confronted them with difficult relationships with other trades.

In 1889 the Society of Telegraph Engineers widened its activities

The Revolution in the Tools

The appearance of new products and changes in the character of old ones, the widening of the market bringing possibilities of standardisation and specialisation, and the growth of semi-monopoly giant concerns combined to make heavy calls on the metallurgists, machine-tool builders and factory organisers. The resulting improvements in the tools and methods of the workshop in their turn assisted and stimulated these general trends in the industry.

The twenty five years between 1890 and 1915—particularly the fourteen years prior to the war—witnessed a minor revolution in the workshop, contrasting sharply with the relative absence of technical change between 1850 and 1890. Many new tools were invented and old ones developed and were accompanied by even more marked changes in workshop and factory organisation.

The changes in the tools were greatest in what was coming to be known as the machine shop. The centre lathes which had for so long reigned supreme in numbers and quality of output were approached, equalled and in some shops overtaken in numbers and workmanship by a variety of other tools. The most important of these new machines were the capstan and turret lathe, the vertical, horizontal, and later universal milling machine, the external and surface grinder, the vertical borer and the radial drill.

The capstan and turret lathes of both the bar and chuck type were quickly found to be far more economical than the centre lathe where simple repetition production of an unlimited quantity was desired. With improvements in their construction, and the introduction of automatic stops, an all-geared headstock and screw-cutting attachment, they became a rival to the centre lathe on better classes of work even where the quantity was more limited. Working between centres and changing the train of gear wheels by hand, the turner on the centre lathe would have the first five of a job off before the turret was set, but in the production of fifty he was left far behind.

The milling machine performed part of the work hitherto done by the fitter with chisel and file, and part of that done by the turner and shaper. But the variety of specialised cutters required and the high upkeep costs confined general use of this machine to quantity production. The development of the grinding machine marked the biggest stride. From sporadic use on spindles and tools after they had been hardened, grinding with a bonded wheel replaced the turner with his emery or cumbersome and inaccurate grinding attachment, to produce a repetition accuracy previously unattainable.

The vertical borer and radial drill both doing work in their stride which would have taken a turner or pillar-driller a day's sweat to set on the face-plate or table, let alone machine, were the two most important of a number of minor time-saving machines developed, but their installation tended to be confined to the most advanced shops.

The centre lathe itself did not stand still. Some wiseacres were ready to consign the grandparent of the new machines to "roughing out" because it was maintained that the capstan and grinder could perform the skilled work, and British lathes for the most part remained heavy and solid, ready and able to do the smith's work for him. But American improvements of the lathe, lighter, of high accuracy and with all-geared headstocks, such as the Hendey-Norton type, helped the turner to hold some of his own. The fear that "the very lathe is being transformed and . . . called a machine"[9] was not fully justified.

The increased use of steel as the chief material for engineering products had necessitated stronger machines, but greater driving-power and more effective and reliable cutting material than "Mushet" or carbon-steel were needed before full advantage could be taken of the new machines. The use of the turbine for generating electricity gave the answer to the problem of driving-power. The solution to the problem of material was seen at the International Exhibition in Paris in 1900. The President of the Institution of Mechanical Engineers declared in 1910 "Those engineers who saw . . . a lathe running at a high speed with a tool with its point red hot removing a dark blue chip felt that they were witnessing the beginning of a revolution in tool steel and in machines fitted for its use," and added, "This revolution has now taken place."[10]

High-speed steel to which he referred had been born to play its not inconsiderable part through high-speed turning tools, twist drills, reamers, taps, dies and cutters, in increasing the tempo of the workshop and changing its organisation. On straight turning the average cutting speed could be raised from 25 feet per minute to 85 feet per minute, and for the milling machine in particular, with its wide cutting surfaces, the new steel reduced wastage of cutters and deepened the cut, and made the miller an economical and vital part of the workshop.

Small changes were made in the instruments of measurement. The micrometer left the manager's drawer to become, as an advertiser claimed in the A.S.E. *Journal* of 1905, "an essential possession of every engineer." Verniers, protractors and squares appeared alongside the trusted calipers and rule in the engineer's tool chest. Slowly but surely decimals began to oust fractions from the drawings.

It was in the type of gauges used that the most significant change in measurement occurred. The plug and ring gauges for threads or plane surfaces became more accurate and common with the better machines available at most firms, but there also appeared "Go and Not-Go" gauges. Interchangeability rather than dead accuracy was the demand of standardised production. Slowly tolerances began to be understood as well as the use of the new type of gauge required to control those tolerances. Once again the result was to speed the tempo of production through less insistence on absolute accuracy and to improve the interchangeability of the product.

The fitter's tools were modified but remained basically the same as those used by his father. The new machines and growing stress on tolerances made large inroads into his work and some went as far as to say that "the main object of these modern methods . . . was that of reducing as far as possible the number of highly skilled workmen, that is fitters."[11] He survived, however. The new methods were accompanied by greater complexity and intricacy of the product and the skilled fitter was still needed to fit and erect the job. The easy fit of every component was still a dream of the future and few firms were manufacturing sufficient spares to allow every "difficult" component to be scrapped. More than this, the new methods, while taking away certain jobs with the one hand, provided with the other a whole new field of work which the fitter was particularly able to perform. Capstans, turrets, lathes, millers, grinders and drills called for special tools, jigs, fixtures and gauges for practically every different job undertaken. While the turner could make himself a mandrel or devise a workable gauge, standardised and repetition production needed lasting, accurate and fool-proof aids beyond the ability of the new machines or operators to produce for themselves. Skilled craftsmen were required to provide the link. The fitter's job was split into erector, bench fitter and tool and gauge maker, but he still had a job to do.

Outside the machine shop the changes were few. The pattern-maker, smith, and millwright continued with their old methods. The millwright increased in importance with the greater maintenance work involved with the new machines and the smith's work tended to decline with added stress laid on steel castings and less on wrought iron. But all were affected directly or indirectly by the changed methods of workshop organisation made necessary by the new tools and changes in the industry.

New Methods of Workshop Organisation

"The most desultory reader of our technical journal," said an engineer in 1901, "cannot fail to be struck with the great and increasing interest which has, of late years, been taken in the internal economy of our engineering workshops."[12] A new "engineers economy" was slowly ousting the old. The chief characteristic of this new economy was the emphasis on planning as against improvisation. Fast production with high-speed steel on a turret lathe was of no value unless plans had been made to utilise the time saved. Up-to-date milling and drilling machines were liabilities unless the cutters, jigs and gauges had been planned and made before the job went into production and steps taken to ensure the continuity of production and elimination of hold-ups. New methods would end in confusion unless all parts of the factory worked at a smooth tempo with a steady co-operative discipline.

This type of planning called for new men in the workshops, or for old men with new titles and functions. In the offices, works engineers, planners, rate fixers and progress men began to appear, though in small numbers, alongside the managers and draughtsmen. The office staff had no longer merely to design a detail as in the past "but also to determine exactly how the machining should be carried out,"[13] the numbers required, the type of jigs and the estimated time to be taken. Few shops were successful in these years in co-ordinating all these plans but in many attempts along these lines were made. To help these efforts "factory doctors"[14] began their rounds, the first of many production engineers, some charlatan, some expert, who were to "cure" the British engineering industry.

In the workshops these new methods meant job-cards, drawings in place of sketches, gauges, "work hustlers," "speed-and-feedmen" and increased supervision. A new layout was necessary. The old toolroom consisting of a forge and grindstone in an odd corner had to give way to a special shop with the best machines for making the innumerable jigs, tools, fixtures and gauges needed for production and firms began to design new toolrooms. Stores for partly-finished details and toolroom products had to be erected. New occupations arose. The day of "every foreman his own inspector" was ceasing to be workable and full-time inspectors began to flit through the shops. Machine-tool fitters—though still called toolmakers—were at a premium and with the ever-present millwright, carpenter and youthful electrician they blossomed into a maintenance department.

Increased inter-dependence of one process on another and higher overheads made time-keeping an economic problem for the employers and no longer a source of light relief in the workshop. Bundy's time clocks appeared at the gates, workers were known by numbers on their clock-cards and no longer by name, and "if you lose more than a quarter you take the day"—this on a six a.m. start—became the cry of foremen and gate-keepers. Once the worker was safely inside he was faced by clocks in each of the shops and in the rate-fixer's hand, and was many times reminded that " a good job done in my own time " was no longer the criterion of the workshop.

Only a little less brazenly than in the 'forties and 'fifties were these developments in the industry, the tools and the methods heralded by some employers as signifying once again the end of the skilled craftsman. Technician and employer united in preparing the grave. Encouraged by somewhat idyllic word pictures of American systems and methods, images were evoked of "one man working six milling machines,"[15] high-speed steel leading to "one third of the machines, one third of the space and one third of the men to perform the same amount of work"[16] and "once a jig or fixture has been properly designed and set up, it is possible in at least 60 per cent. of the cases to employ very much cheaper and occasionally unskilled labour to perform the same work with as much accuracy as any highly paid mechanic."[17] Instead of the "labourers" of Nasmyth's day, the title given to the new saviours was "handymen," but Nasmyth's polemics against the skilled craftsmen could have been re-spoken with little other alteration.

But the shrillness of these cries could not obscure reality. While the craftsman was far from disappearing he was to play an important change in the workshop that was taking place. An industry peopled solely by production engineers, technicians and handymen was a dream: but an industry in which the technicians and craftsmen assisted and led a number of less skilled workers, who themselves were developing special skills, was the next stage in the evolution of the industry. With wages, working conditions and profits at stake in this transition, a peaceful evolution could not be expected.

The effect of the war on the industry, after an initial dislocation, was to spread and carry further most of the trends noted in the more advanced and larger shops in the fifteen years prior to 1914.

Unemployment to all intents and purposes disappeared and recruitment to the industry occurred at a greater rate than ever before. Among the new entrants were women who for the first time took their places in significant numbers alongside the men in the engineering shops. Standardisation, specialisation and quantity production, and the planning and organisation that these methods involved, were introduced in the medium-sized shops under rather abnormal conditions. Full and extended use of the new machines was hastened, and the slow cutting tools of carbon steel were finally sent to the scrap heap. American and, to a lesser extent German, experience encouraged the use of automatic and semi-automatic special-purpose machines.

The new tools and new methods were not present in every factory. The tradition of keeping new developments behind closed doors and discouraging visitors was one reason for backward shops. The conservatism which had eaten into many employers following forty years of unrivalled success was another and more important reason. This was particularly marked in the general and heavy sections of the industry. The urgency of war needs and the incentive given to the new methods by guaranteed and standardised demand improved the position, but in 1917 the President of the Institution of Mechanical Engineers could say:

> "There are still shops without definite planning of the progress of the work, without adequate equipment of jigs and gauges and without standard shapes of tools or a tool-room; where men drift about in search of tools and tackle or wait in idleness for drawings or materials, where the machinery is obsolete and lighting so bad that good work could not be done if the machinery were up to date."[18]

In the largest shops—the most important for the Society, as it was in these that the majority of members were employed—the new techniques of production and methods of organisation had been introduced rapidly and widely, but in the industry as a whole the old was still strongly entrenched alongside the new.

These years witnessed a revolution in the means, methods, organisation and products of the industry comparable to that which occurred between 1800 and 1840. The speed with which the new methods were adopted was greater than in the first half of the nineteenth century. The consequences of this revolution for the engineering workers and their organisation were far reaching and dramatic. Just as improvements in techniques meant throwing old methods and machines on the scrap heap, though the aim of improved production remained the same, so was it necessary for the engineers to re-mould their traditional views on organisation, policy and skill while still maintaining their aim of defending and improving their standard of life. Finally, just as the revolution in the tools was still incomplete in 1920 and the possibilities afforded by the changed methods still largely unexplored, so the changes in the Society had not reached fruition. The revolution in the tools in the 'twenties and 'thirties of the nineteenth century had prepared the way for the united organisation of skilled men, the A.S.E. The revolution in the methods and tools of the beginning of the twentieth century was preparing the way for a further amalgamation and the development of an organisation which included all grades of workers from fully-skilled to unskilled.

The Engineer: The Society Member

With the new tools and methods creating new jobs for which full skill was not necessary, apprenticeship was no longer the only channel of entry into the industry and the Society. But it remained the most important channel. While indentures had fallen from favour and their place taken in a number of branches of the trade by verbal agreements or the "learner" system, the majority of lads entering the industry expected to be taught a skilled trade. At the same time it was becoming clear that with the introduction of new concepts of machine operation and design, the traditional method of learning a trade by watching and imitating a skilled man needed revision. This matter was continually discussed and the founding of the City and Guilds Central College in 1880 and the transfer of technical education from the School Boards to Local Authorities ten years later, showed an understanding that to keep abreast of modern developments, more than workshop experience was necessary. But while young apprentices and learners had to start work at six a.m. and did not finish until five thirty or six p.m., there was little hope that many of them would undertake study outside of working hours. Some employers granted apprentices time off to attend schools, but such foresight was swamped in the new speed-and-feed philosophy of "every minute in the workshop counts." The commercial dictates of the moment and the technical needs of tomorrow presented a contradiction to the engineering employers which they found peculiarly difficult to resolve.

The trades followed by the young engineers entering the Society remained predominantly those of fitting and turning. While membership of the Society was gradually opened to workers following ninety three different trades in the engineering industry, nearly 90 per cent. of the full members joining between 1892 and 1914 were fitters and turners, with fitters outnumbering turners by two to one. Of the apprentices who joined over 90 per cent. followed these trades. Machinist and smith were the most important of the remaining trades though they accounted for only an average of 5 per cent. and 2 per cent respectively of the full members and for an average of 7 per cent. and 4 per cent. respectively of all workers joining. By limiting entry in practice rather than by rule the Society by 1914 could no longer claim to be a reflection of the whole trade but instead was becoming, in spite of the obvious dangers, a "Society of Fitters and Turners." At the same time the heavy recruitment of young engineers in these two trades—for example 65,000 fitters and 25,000 turners joined between 1910 and 1914, all aged on an average under 25 years—was an indication that whatever miracles the new machines could perform, fitting and turning were still the backbone of the industry.

Finding a Job and Travel

Job-getting had become more difficult. A persistent reservoir of unemployed engineers in most of the main centres of the trade had undermined the usefulness of the "travel" scheme. Between 1880 and 1890 an average of just over 1,000 travel cards was issued to members each year enabling them to draw benefit in the various towns where they were seeking work. Between 1890 and 1910 when both the total membership and the number of unemployed increased an average of under 500 cards was issued each year. The percentage of unemployed members using travel cards fell from 10 in the 1890's to 4 in the 1900's and to 1 in 1910 to 1914.[19] A further obstacle to finding jobs was the growing insistence of employers that foremen should not be Society members. The trade paper *Engineering Times* put the issue bluntly in declaring "a man cannot serve two masters" and employers were encouraged to solve the difficulty of foremen's financial interest in the Society by buying them out with a lump sum equivalent to their subscriptions to the Society and by forming Foremen's Clubs.[20]

In 1909 the Labour Exchanges Act radically transformed the Society's function as an employment agency, though the function did not disappear entirely. The Labour Exchanges were seen by some members as "doing what the Employers' Federation failed to do—keep a complete and up-to-date record of all men seeking situations"[21] —thus enabling the employers to get the cheapest labour. Such members placed more faith in the older methods as set out in the initiatory address:

> "So to conduct ourselves that employers may be led to value our institution and enquire for our members when in want of workmen."

Others fully supported Exchanges and in a few cases became managers in the hope that the Government might be able to do what the Society had failed to do—solve the problem of unemployment. But before Exchanges had been put to the test the 1914-18 war made unemployment among engineers a thing of the past.

Travel overseas in search of a job continued in these years, but the direction of the travel was now towards British possessions overseas. While the number of branches in the U.S.A. remained practically stationary between 1890 and 1913, at forty, and the number of members, with fluctuations, at two thousand five hundred, a very rapid increase took place in Australia and New Zealand and in South Africa. In Australasia the number of branches rose from twenty four in 1890 to eighty two in 1913 with a membership increasing from two thousand six hundred to nearly eleven thousand. This increase was only partly due to members emigrating, the majority of new members were recruited in those countries. In South Africa there were no members or branches in 1890, the first starting in 1891, but with the great industrial activity at the turn of the century, a number of members emigrated and by 1913 there were twenty six branches with two thousand eight hundred members. In Canada, membership had risen from barely two hundred and fifty to over one thousand, but, as in the U.S.A., the existence of the growing International Association of of Machinists handicapped recruiting. In 1913 there were, in all, over seventeen thousand members overseas in one hundred and sixty nine branches in nine countries forming approximately ten per cent. of the total membership. By June, 1920 overseas membership had climbed to thirty two thousand in two hundred and twenty four Branches of whom nineteen thousand were in Australasia and eight thousand in South Africa.

Hours and Methods of Payment

For the Society member in a job little change took place in his hours of work. The Royal Ordnance factories and Dockyards adopted a forty eight-hour week in 1894 to be followed by a number of progressive employers, but in the majority of shops the hours were fifty three and fifty four a week and in periods of good trade overtime was worked extensively. The start was still 6 a.m. in most shops with a break for breakfast, but after 1897 a number of employers were finding that the early morning hours before breakfast did not show very high returns. Only a fraction of the staff—increasingly necessary to hustle and plan the work—were present on this shift and the workers were not inclined to "have a go" with the fast machines on an empty stomach. In Derby, Huddersfield, Elswick and other centres a "One Break" system was suggested ; a start at 7 a.m. with one break for dinner instead of the 6 a.m. start with two breaks, one for breakfast and one for dinner. By 1907 about two hundred fair-sized firms were working this system[22] but it was not well received by the members. Unless hours were reduced to forty eight, they preferred the early start with shorter shifts than a later start and two shifts of five hours each.

The change in the method of payment was rapid. In 1886 only 5 per cent. of the men and youths employed in the engineering and boilermaking industries were paid on a piece-work system, the remainder being on a time basis. Twenty years later 27.5 per cent. of the workers in these trades were paid by results. In particular occupations the increase was more marked. In 1886 between six and seven per cent. of the fitters and turners were paid by results and, in 1906, thirty three per cent. Among machinemen the proportion had risen from eleven per cent. in 1886 to forty seven per cent. in 1906.[23] By 1914, forty six per cent. of the fitters, thirty seven per cent. of the turners and nearly fifty per cent. of the machinemen in Federated shops were working under some system of payment by results.[24] In the railway carriage and wagon building section and in the cycle making section, 67.6 per cent. and 52.8 per cent. respectively were on piece-work. The new machines and growth of standardisation made piece-work possible in most branches of the industry instead of confining it to a few sections such as textile-machine making. At the same time the spread of the system made some revision of the "piece-master system" imperative.

In the majority of cases straight piece-work was being operated, but an alternative method which received much support among employers in the first decade of the century was one variation or another of the premium bonus system. Under this system—American in origin with British additions—the worker or group of workers was allowed a certain number of hours in which to do the job. If he took more than the fixed time, the normal time rate was paid, if he took less he was paid time rate for hours worked and the saving was divided in varying proportions between the workers and employer, but in no case was the worker credited with the whole of the saving. The advantage of a premium bonus system to the employers, particularly the Rowan system, the one most widely adopted in Britain, was that it compensated to a certain extent for the lack of expert rate-fixing and the tendency to err in fixing prices or times on large and complicated jobs. Under the Rowan system no matter what the error in fixing the time or what effort and energy was expended by the worker he could never earn double his time-work wage. This fact also helped to remove the tendency, admitted on all sides, for the employer to cut times or prices when the worker speeded up the job. As rate-cutting had been one of the main objections of trade unionists to piece-work, it was hoped that its elimination would lead them to accept the system with open arms.

While the premium bonus system removed some of the worst features of piece-master methods by reducing rate-cutting and by instituting a minimum rate of time-work and the payment of bonus through the pay office, mutuality in fixing the times or prices was originally not part of the system. James Rowan, speaking on the workings of his system in 1903, said that the workers were not consulted "as it was discovered that none of them knew the length of time it would take to do the work."[25] At Barr and Stroud's, Glasgow, one of the shops where the system was introduced, a notice was posted explaining its operation and giving certain guarantees. Item number ten read "In cases of dispute the matter will be referred to the management whose decision shall be final."[26] A far cry from mutuality.

Barr and Stroud, Weir's of Cathgart, Armstrong Whitworth's of Newcastle and Vickers of Barrow were among the first of the larger firms to introduce the premium bonus system. The Royal Dockyards adopted it in 1904 and it spread to a number of other important factories. In the 1906 Wage Census 4.6 per cent. of the workers were under a premium bonus system, and three years later an enquiry by the Society revealed that 9.2 per cent. of the members were working the system in forty six different districts.[27] At the same time strong and successful efforts were being made to introduce greater mutuality. By the terms of an agreement in 1907 prices were to be fixed by "mutual arrangement between the employer and the workman" and local by-laws in different districts improved the operation of both the premium bonus and straight systems of payment by results. In very few cases, however, was any agreement reached, or even attempted, on the percentage above time rates expected from bonuses or piece-work prices. This was left to individual bargaining and the strength of the Society in the shops, and on the whole an improvement was made in piece-work earnings. Whereas the earnings of the few skilled men on piece-work in 1886 averaged only fourteen per cent. above plain time rates without special bonuses, by 1906 the earnings of the increased number of piece-workers exceeded plain time rates by nineteen per cent.[28]

Wage Rates

Time rates fluctuated with conditions of trade and rose very slowly. By 1913-4 the majority of district rates were between thirty six shillings and thirty seven shillings, compared with thirty shillings to thirty four shillings in 1892. London continued above the average and was joined by the port towns of Southampton, Portsmouth, Cardiff and Liverpool. The smaller Yorkshire textile-machine making towns, on the other hand, were below the average as were the railway centres of Swindon and Crewe.[29] With the considerable extension of collective bargaining during these years., the district rates became more fully operative and the average time rates for all turners in the country, union and non-union, in 1913 was thirty five shillings and sixpence, very close to the average rate for Society turners.

The tendency for some skilled trades to be paid at different rates continued. Patternmakers, moulders, smiths and brass-finishers all received a rate of two shillings to four shillings higher than that of the fitter or turner whose rates were practically identical. A machinists' "rate" also appeared. It was not a rate in the true sense of being recognized by the employers or the unions, but machinists when on time-work were paid above the labourer's rate and below the skilled man's rate, usually closer to the labourer's. Over the whole country this rate averaged twenty one shillings and tenpence in 1914.[30]

Rates for other categories of workers arose as methods of working changed and as the Society increased its influence. In the new tool-rooms the skilled men were paid a special rate, usually about two shillings higher than the skilled production workers. Special types of jobs such as dirty work, outworking, and trial trips were covered by special agreements, mainly local but sometimes national, granting allowances or higher rates of pay. With greater insistence on the district rate close attention was paid to the rate of improvers, a category between apprentices and recognized journeymen. Local by-laws were laid down which usually allowed an improver to start in the shop in which he served his time, at under the district rate but with fixed increases every three months until the rate was reached. If he started in a new shop he would have to be paid the full rate. These agreements and by-laws reflected the growing insistence of the Society on the rate for the job.

While hours of work remained practically the same in these years and money wages rose slowly, the cost of living increased more rapidly. Taking 1900 as 100, the index of retail prices rose to 111.0 in 1913,[31] while the time rates for skilled engineers rose from 100 to 105 in the same period. The small increase in time rates was more than offset by the increased cost of living and the engineers were worse off in 1913 than they had been twenty years earlier.

With different systems of payment by results, time in hand, or lying-time, was introduced in a number of shops, but not without opposition from the workers. On the other hand it was the employers who bitterly resisted the Clyde falling into line with the rest of the country in adopting the system of weekly payments. This was granted in 1901 but taken away on the pretext of bad timekeeping the following year, and it took a united movement of twenty different unions before it was granted again in 1906.

The Revolution in Workshop Conditions

Inside the shops startling changes had taken place. At the gate, clocks and time-cribbing had been widely introduced. One member remarked that "the employers would like to put a micrometer on the clocks if they could."[32] In the yards "policemen in various shapes and forms and under different names"[33] had made their appearance. In the shops the workers were "watched and dogged by a whole army of non-producers."[34] Piece-work and premium bonus systems, speed-and-feed men, operation inspectors, work-hustlers—elements of the Taylor plan "one of the last stages of lunacy"[35]—and the general speed-up with the new machines and improved cutting steels, altered the character of the engineer and the type of problem facing the Society. For the first time and by no means the last, the skilled man could be ordered to "Do as you're told ; we do not pay you to think"[36] and while a few employers tentatively put forward "suggestion schemes" and "co-partnership" in an attempt to narrow the gap between the Limited Liability Company with its absentee shareholders and owners on the one hand, and the workers in the shop on the other, the schemes were neither successful nor long-lived.

The general speed-up in the shops put a premium on youth. Sir Benjamin Browne, a leading member of the Engineering Employers' Federation told the Poor Law Commission in 1908 that "in many trades, particularly engineering, boilermaking and shipbuilding, men have little chance of finding a fresh situation after fifty or even forty five"[37] While the average age of members claiming superannuation increased slightly from 62.7 years between 1891-1895 to 64 years, 1909-1913,[38] those members who lost their jobs when in their fifties were usually forced to take another below their skill and ability before finally becoming superannuated.

Some members were overcome by the changes. The machine had become a "monster" which the engineers had to follow rather than control and one old engineer related sadly in 1915 :

> "A decade and a half ago one could come into the shed fearlessly and with perfect complacence ; work was a pleasure compared with what it is now . . . . Now, however, every day brings fresh troubles from some quarter or other. The supervisory staffs have been doubled or trebled . . . before the workman can recover from one shock he is visited with another."[39]

Others turned and faced the new conditions, realising they had come to stay and that just as their fathers had fought to make "work a pleasure" so these new methods and monsters must be tamed, and used for the benefit of the men and not to their detriment.

In addition to mental and physical strain the new methods entailed increased physical danger for the workers. Engineering employers in Britain were traditionally neglectful of fencing and guards for their own machines compared with the guards placed on the machinery they made for other trades, and the Inspector of Factories who visited the Paris Exhibition in 1900 reported that machinery on the continent was better safeguarded than in Britain.[40] With the Workmen's Compensation Acts of 1897 and 1906 the workers themselves began to take a hand and the activity of Society officials in instructing the members how to claim compensation and in fighting the cases in the Courts slowly improved conditions. At the same time it was being recognised by the more enlightened employers that the saying "where there's muck there's brass" no longer applied—if it ever had done—to an industry with electric light, expensive machinery and an increased tempo of production.

Living Conditions

The development of more democratic forms of Local Government in which individual members of the Society played no small part, led to a gradual improvement in the living conditions of the working classes. Dramatic exposures of some of the worst features of the older industrial towns by socialists and middle-class philanthropists awakened the social conscience of the nation and forced the State to play a more direct part in ensuring a minimum standard for the people. In the first decade of the century pressure from the trade unionists and the newly-formed Labour Party combined with the Liberals' fear of the consequences of inaction placed Old Age Pensions in 1908 and National Insurance in 1911 on the Statute book. The Society, which had for nearly sixty years practised and not merely preached the need for caring for workers in old age, played a leading part through the General Secretary, George Barnes, in the movement for old age pensions. His activity on committees, at meetings and later in the House of Commons for this cause, led to the saying that his name and old age pensions were inseparable. The National Insurance Act covering health and unemployment insurance was greeted more circumspectly by trade unionists, but once it was passed the Society became an "Approved Society" through which sick benefits could be paid to the members. A hundred years after the millwrights had first clubbed together to help one another in times of sickness and distress, the State recognized that provision for the sick and the unemployed was a national problem.

But these measures only touched the fringe of the social problems. The methods which had been adopted to make Britain the workshop of the world had left heavy burdens on the working people which had been little lightened by the acquisition of an Empire. It could still be reported in 1911 that 31.6 per cent. and 32.6 per cent. of the population of Newcastle and Sunderland respectively lived more than two persons to a room. In London boroughs the proportion was similar. In Finsbury, for example, it was 39.8 per cent., Shoreditch 36.6 per cent.

and Bermondsey 23.4 per cent.[41] In Scotland the position was worse. Of the 759,614 persons living in Glasgow in 1911, 63 per cent. lived in one or two-roomed dwellings.[42] A reflection of these overcrowded and insanitary conditions was the infantile mortality rate. Of the children born in 1908 in the big engineering centres of Glasgow, Sunderland, Manchester and Liverpool, between one in six and one in seven died before they were a year old.[43]

The engineers, the skilled men, were still slightly better paid than less skilled workers in other trades, and membership of the Society had assisted them in times of unemployment and sickness long before the State played a part. The Society also helped members to obtain better living conditions by granting loans to purchase houses. Between 1897, when the scheme came into operation, and 1920, over 2,500 members had been assisted in this way. But in spite of these advantages, the average expectation of life in 1914 of the skilled engineer was only 55 years and of his wife only 50 years. The war of 1914-1918 removed the problem of regular unemployment but ended the social measures, particularly new housing, so vitally necessary for a healthy Britain.

The War and Immediate Post-War Years

The effects of the war on the Society member were diverse. In some respects he was overwhelmed by a series of spectacular changes which in June, 1914, would have been considered impossible. In other respects the tendencies noted in the pre-war years became stronger and more marked. In the immediate post-war years the high tide of spectacular changes receded leaving the engineer nearly, but not quite, with his pre-war conditions. But the slower and steadier changes were consolidated and confirmed.

The opening of the ranks of the engineering trade, slightly at first and later wide, to all and sundry, men and women, was the first spectacular change. The necessities of war production made the normal methods of recruiting by apprenticeship quite inadequate. Widespread dilution took place, the industry swelling in four years to over twice its pre-war size. Skilled men were still the leaders of the shop, but instead of being in a majority they were outnumbered in the larger shops. The end of the war reversed the process. The dilutees ran, drifted or were eased out of the industry and by 1920-21 the queues at the clock were mainly old faces. But not all. According to figures supplied by firms belonging to the Engineering Employers' Federation and according to their definitions of the grades, the number of semi-skilled workmen per hundred had risen between 1914 and 1921 from twenty to thirty with a decrease of skilled men from sixty to fifty, the number of unskilled remaining unchanged at twenty.[44] These figures do not distinguish the increase in women workers, but between the census years of 1911 and 1921 the percentage of women to the total number of workers employed in Great Britain in the manufacture of metals, machines, implements and conveyances rose from six per cent. in the former year to ten per cent. in the latter.

The second spectacular change was in wages. The wages of a skilled fitter and turner on time-work had risen approximately 125 per cent. by May, 1920 compared with July, 1914 in a vain attempt to catch up on the prices of foodstuffs and household requirements. A fitter in Manchester who took home £1 19*s*. 0*d*. for 53 hours' work in 1914, was taking home £4 8*s*. 4*d*. for 47 hours' work in 1920 but could buy less for his money. Moreover his wage rate in 1920 was no longer the solid district rate of 1914. The district rate of the Manchester fitter had only increased to 46*s*. by 1920. The difference between this figure and his pay packet consisted of successive instalments of war bonus, three in 1917, two in 1918, one in 1919 and one in 1920 and a further 12½ per cent. on earnings. These bonuses were perched on top of the District Rate, as unstable as a house of cards. Heavy overtime and the "time and a bit" and "Hallelujah" rates offered by some employers had helped him gain on the soaring cost of living, but these additions were even more unstable than the war bonuses:

The third change was the assistance given by the State in an attempt to enforce the new concepts of time-keeping and shop discipline which had been developing in the decade before the war. In 1915 the Ministry of Munitions instructed all firms to post rules and regulations under the Munitions of War Act "with respect to the general ordering of work" in the establishments. This apparently harmless phrase was understood both by the employers and the Ministry to mean not only regulations covering right of entry into the factories, unsafe practices and safety precautions but also rules, with fines attached, for such "misdemeanours" as smoking, congregating in gangways awaiting the buzzer and gambling. The Munitions Tribunals were the machinery for enforcing the fines and punishing absentees and latecomers. Resistance to these measures was continuous and 1918 saw the withdrawal of legal sanction and the disappearance from most firms, but again, not from all, of the elaborate notice-board.

Less spectacular but more lasting changes which took place were the spread of systems of payment by results, the increased subdivision of work and the consequent increase in the number of different trades, as well as the general co-ordination of the factory by planners, work-hustlers, inspectors and speed-and-feed men. In each case there was some recession after the war, with the return to smaller orders and a greater variety of products, but the effect of the war had been to consolidate and refine these methods in firms where they had already been practised and to introduce them to a number of firms hitherto untouched.

CHAPTER VI

The New Spirit and the Lock-out : 1892-1898

The decisions made at the Leeds Delegate Meeting of 1892 marked a turning point in the history of the A.S.E. Sweeping changes were made in the rule book in an attempt to bring the structure and policy of the Society into line with the tremendous growth which had taken place in the industry and in the Society since the framework of the organisation had been laid down in 1851. These changes were followed by the development of a spirit of militancy greater than had been seen in the Society for twenty years. At the same time the 'nineties were marked in the technical field by the introduction of new machines—such as the capstan and turret lathes, milling and grinding machines—which though not widely used, tended to make the decisions of the Delegate Meeting out of date almost as soon as they had been agreed upon.

These decisive technical changes added to the problems facing the Society and made it search for ways and means whereby the fruits of technical advance would fall to the engineers in the form of higher wages and shorter hours. The employers, for their part, combining in large companies, were rapidly learning the lesson of unity and were determined that full advantage of these technical changes should accrue to them only. The epitome of this conflict of interests was the great lock-out of 1897-98 where the militancy of the engineers was matched by the determination of the employers to strengthen their control in the industry. The lock-out did not end the conflict, but it introduced new features of industrial bargaining which were to have widespread consequences.

Reorganisation of the Society

The credit for most of the changes of the Delegate Meeting of 1892 must go to the forces which had been brought together by Tom Mann's candidature for General Secretary in 1891. For ten whole weeks the proposals of the new and the convictions of the old schools were debated and discussed by the delegates. Votes were close, arguments heated. The Chairman soon found himself unsuited to control such a meeting and resigned and the General Secretary, John Anderson, later referred to the meeting as "the ten most trying weeks of my life." Trying to individuals no doubt they were, but to the Society as a whole they brought a new lease of life.

The most important changes were organisational. The old Local Executive Council, composed since 1851 exclusively of working representatives of London branches was replaced by an Executive Council consisting of full-time officials elected by eight electoral districts. On a district scale, Central District Committees were abolished and six full-time Organising District Delegates were to be elected to act as organisers, negotiators and intermediaries between the Executive Council and the strengthened District Committees. The General Executive Council was abolished and its powers were taken over by the Delegate Meeting which was to assemble every four years and to act both as final appeal court and rules' revision committee. In short, in the place of four full-time officials for a Union of 70,000 members, there were now seventeen

The base of the Society was also broadened. Full membership was open to wider sections of the industry including, for the first time, electrical engineers, roll turners and machinemen. Apprentices were to be recruited as probationary members at eighteen years, and two further Sections were created for workers between thirty and fifty five years who were not eligible to join the full members' section because of age, infirmity or a lower rate of wages.

A change in finance calculated to allow a more vigorous trade policy to be pursued was the creation of a Superannuation Reserve Fund. It was agreed by all that payments to superannuated members was one of the fundamental duties of the Society. Nevertheless, as the scale of benefit and the numbers entitled to receive it increased, it was becoming a continuous drain on the finances of the Society. The levy of 4*s*. a year on all members to build up a reserve fund was an attempt to take the strain off the General Fund.

Two important changes in policy were also made. The first was the abandonment of the piece-work rule of 1874 which had "proved to be practically unworkable, and in the endeavour to enforce the same, many good shops have been closed against our members."[1] The new rule gave the District Committees the power, subject to the approval of the Executive Council, to lay down conditions and regulations to control piece-work according to the local situation. The second was the decision which allowed the Council, after consulting the membership, to raise the necessary funds to enable the Society to take part in national politics.

At the Delegate Meeting four years later the only important modifications were the re-creation of the General Council to act as a Final Appeal Court instead of referring appeals to the Delegate Meeting and the election of a General Office Referee to whom complaints could be made regarding the Executive Council. In addition powers were given to District Committees to appoint shop stewards, and monies from the Superannuation Reserve Fund could be loaned to members to enable them to buy their own homes.

Revision of rules, however, did not mean that the new possibilities before the Society were grasped automatically. A revision in outlook was as necessary as a revision of rule and the four years following the Leeds Delegate Meeting were years of discussion and experiment as to how the new rules were to be used in solving the new problems.

Some of the decisions were hardly operated at all. No attempt was made to test the opinion of members on Parliamentary representation, although it was agreed that £100 a year should be granted to John Burns who, through the voluntary efforts of a large number of engineers and workers of Battersea, had been returned for that constituency in 1892. On the other hand, when George Barnes stood for Rochdale and Tom Mann for Colne Valley in 1895 under the auspices of the Independent Labour Party, no assistance whatsoever was forthcoming from the Council. Their policy was summed up as follows :

> "The Council decline to select candidates or to pay their election expenses . . . when a member wins a seat in Parliament his claim to financial assistance will be considered."[2]

Similarly, the members did not take readily to the new sections. By January, 1898 there were only some 2,000 apprentices and 4,500 Trade and Trade Protection members out of a total membership of over 91,000.

Nor did the increase in the number of full-time officials lead immediately to a more vigorous and co-ordinated trade policy. To some the severe depression in the engineering industry between 1892 and 1894 provided full justification for retreat and acceptance of wage reductions without a struggle. John Anderson could report "the policy of the Executive remains unchanged as the attitude of forbearance and conciliation adopted since its advent to office, as aggression even in the mildest form in the face of such a state of trade might have had disastrous results."[3]

The demand for the 8-hour day endorsed by the Trades Union Congress, was continued only sporadically. The great victory of 1894, when, thanks to the efforts of John Burns and other M.Ps., the Government agreed to introduce the 48-hour week in Government factories and dockyards, was not followed by a co-ordinated movement by the Society. Though individual negotiations were continued and were successful in some cases, notably at the Thames Iron Works Ltd., London, the Scotia Engine Works of Sunderland owned by William Allan, M.P. and Mather and Platt's of Salford, and publicity on the success of the system in these shops was undertaken, there was no general demand for the eight-hour day until the London Societies moved in 1896. Equally on overtime, Organising District Delegates and District Committees made strenuous efforts to restrict the number of hours worked per week or month but it could still be reported that in important engineering towns such as Blackburn, Barnsley and Bolton "a twelve or fourteen-hour day has been more familiar than a nine-hour day pure and simple."[4]

The lack of co-ordination of policy was most marked on piece-work. This was probably inevitable due to the radical change made in this rule at Leeds and to the uneven development of the system in different sections of the industry and different parts of the country. But the employers did not hesitate. The General Secretary reported in 1893 that :

> "Our new rules have been closely scrutinised by our employers . . . . they apparently regard the piece-work rule as a direct invitation from us to institute the system whenever and wherever they desire it."[5]

In face of this the Districts pursued differing policies. Nottingham and the Clyde District Committees, for example, used their discretionary powers to ban piece-work altogether. Manchester, on the other hand, worked out a code of rules for the guidance of piece-workers with the object of checking the "cutting down propensities" of employers. In this and other Districts which attempted to control piece-work a new feature in the organisation of the Society was introduced—shop committees. Their function was to act for the members in the shop and in conjunction with the management's representative, usually the foreman, in fixing prices. There still remained in districts recognizing piece-work confusion as to whether District Committees or the members in the shop were responsible for the control of prices. The Executive Council ruled, partly in recognition of the diverse character of piece-work in the engineering industry, and partly from the traditional attitude of ignoring piece-workers that:

> "the last Delegate Meeting did not sanction piece-work for the purpose of guaranteeing to some members an increased wage for the rate of contributions which is paid by those compelled to be content with day-work wages, and therefore shop rates of piece-work must be regulated voluntarily by those engaged in the system."[6]

Ingenious and, on the surface, logical as this ruling was, it hardly encouraged unity in the Society and it was clear that to allow members to work piece-work yet leave them without the support of the Society would, sooner or later, undermine the wages of the day-workers.

The New Spirit

While caution, and to some extent confusion, continued to mark the policy of the Society and particularly of the newly-elected Executive Council, they were by no means the only features. The Leeds Delegate Meeting had brought a new spirit to the rank and file which found outlet in Voluntary Organisation Committees which were formed up and down the country, and ready assistance was given to the District Delegates to help them to cover their vast territories. Scotland, which had declined as a Society stronghold following the defeat of the 51-hours' movement in 1879, saw a big revival. South Wales, hitherto almost untouched except for Cardiff and Swansea, began to be organised and a campaign was started in the backward Eastern Counties. In London an active District Committee opened up shops like Maudslay's, Humphrey Tennant's and Penn's which had been closed to the members since 1879.

Throughout the Society serious debates took place on policy. Anderson could report "serious internal differences of opinion as to the future method of dealing with social and industrial questions" and made clear the viewpoint of the Executive in these discussions when he said:

> "we utterly deprecate any attempt to throttle the opinions of old tried and trusted branch and district officers for the unjustifiable reason that they refuse to forgo the convictions of a lifetime for something that, as yet, is but imperfectly understood."[7]

But the convictions of a lifetime were proving little defence against the new conditions in the industry, the handymen, the semi-automatic machines, payment by results and combinations of employers which together were undermining the position of the skilled engineer.

Events on the Clyde and in Belfast at the end of 1895 were mainly responsible for rousing the whole, and not merely a minority, of the members to activity, for the emergence of a more aggressive policy and for the change in leadership which took place in 1896. The 1892 Delegate Meeting altered the structure of the Society; the events in the North-West brought a change in policy to match it. As such they were the first link in the continuous chain of events which were to culminate in the lock-out of 1897.

In September, 1895 the men on the Clyde put forward a demand for a minimum wage of 7½*d.* per hour, but eventually accepted a compromise which gave them a smaller rise. One month later the members in Belfast, whose organisation after years of hard work could be described as next door to perfect, demanded a full restoration of the 2*s.* reduction which they had been forced to accept in 1893. A time limit was fixed and just prior to its expiration the Belfast employers referred the men to the Clyde Employers' Association with which they claimed a working arrangement. Strongly against the wishes of the men, the Executive Council agreed to arrange for a joint meeting to be held in Carlisle at which the Clyde and Belfast employers and the Society would be represented. The Executive contended that the joining of all shipbuilding centres was not an unmixed evil as the Society had been struggling for years to obtain greater uniformity of rates in different centres.

At the Carlisle conference a small concession was made which the Belfast men refused to accept and struck work for the full demand. To the surprise of the Society and the public generally, the Clyde employers then operated a secret agreement with Belfast employers and posted notices to the effect that 25 per cent. of the Society men on the Clyde would be dismissed each week until the Belfast members went back to work. The Clyde members would not tolerate this and struck work in a body in support of the Belfast men and reiterated their own demand for 7½*d.* per hour minimum. So began the struggle against what was described as "the strongest combination ever banded together to crush trade unionism." Three thousand A.S.E. members were involved along with about 1,300 non-Society men.

The Times from the first took the side of the employers and called into question the finances of the Society. But other influential organs of the press and the mass of the general public in Belfast and on the Clyde were sympathetic to the men. The *Financial News* printed a leader attacking the employers stating that "nothing more cowardly has disgraced the sordid history of trades' disputes in this country."[8] The London Trades Council sent messages of support to the men, and twenty unions contributed to the strike funds.

It was primarily the publicity which the strike received which finally induced the employers to negotiate with the men at a conference where Lord James of Hereford was in the chair, and the Lord Provost of Glasgow and the Lord Mayor of Belfast were present. The first offer made by the employers was rejected by both the Belfast and the Clyde men, but in January 1896, a further offer which constituted a partial victory for the unions was accepted by the latter but not by the former. The Clyde strikers outnumbered the Belfast men by more than two to one, with the result that the majority of the aggregate votes were in favour of the settlement and the Executive Council ordered the Belfast men to return to work along with the members on the Clyde. The Belfast members objected strongly. Their organisation *vis-a-vis* their employers was very much stronger than that of the Clyde members and they considered that their strength had been dissipated by the extension of the dispute and did not feel bound by the result of the joint vote. " Betrayal " was only one of the words used in Belfast, and feeling against the Executive ran high. To enforce their decision, the Executive had to suspend the payment of all contingent benefits there. Finally Belfast went back, but at the Delegate Meeting held four months later, at Whitsun, 1896, the policy of yielding when a complete victory was possible was roundly condemned and the Executive were ordered to pay arrears of benefit to all members whose contingent claims had been stopped.

These events brought to a head the increasing dissatisfaction in the Society with the Council and with John Anderson in particular. In May, 1895, George Barnes, who was gaining a reputation as a militant and energetic " new " unionist, had resigned the Assistant Secretaryship to oppose John Anderson as General Secretary. Amid the usual cries of " waste of money " and " members in office should never be opposed," Barnes, supported by many officials and by Tom Mann, the previous challenger, conducted a vigorous campaign. Barnes stood on a policy of direct Parliamentary representation for the Society, increased militancy in trade policy, federation of all kindred societies, the transformation of the *Monthly Report* into a Journal for discussion of Society problems, and for fettering the powers of the Executive Council, which he claimed " enjoys a position of practical irresponsibility." He ran Anderson very close, securing 11,603 votes against the former's 12,910. That the contest was one of policy rather than personalities could be seen from the views expressed by Anderson's supporters in the Midlands who presented him with an illuminated address which read :

> " Our Society, ostensibly void of any political caste—numbering 77,000 members—is a great civilising power in any state, a real provident society and old age pension fund . . . and your supporters in the Midland desire it will continue so and that politics will never be allowed to dominate our great organisation is the dearest wish of our hearts."[*]

In August, 1896, after the Clyde-Belfast dispute, the Executive Council considered it necessary to dismiss the General Secretary for " wilful neglect of duty." Charges and counter-charges were made but in the election which followed George Barnes stood once more on policy rather than personalities. Sidney Webb was added to his list of supporters, and pointing to Barnes' comparative youth—he was thirty-seven—compared him with the " young " founders of the Society in 1851, prophesying, " We may be on the eve of a crisis in the history of the Amalgamated Society if not that of trade unions generally."[10] Against six other candidates, Barnes secured 17,371 votes, over 8,000 more than Anderson the runner-up. In the same year three Executive Councilmen stood for re-election and though they retained their positions secured only an average majority of 250 votes each.

The temper of the members was changing and concurrent with these elections, District Committees throughout the country, almost without exception, were making demands on the employers. In the provinces wage claims were made and in London the offensive on the 8-hour day was resumed. Early in 1897 an Eight Hour Committee composed of representatives of the London Committees of the A.S.E., the Boilermakers, the Patternmakers, the Steam Engine Makers and a dozen smaller engineering unions was formed, and in May presented eight hundred odd firms in London with the demand for a reduction of hours.

In addition to these demands other matters were being discussed with the employers in certain localities. The " closed shop " was advocated and to some extent operated in Belfast and Scotland in 1896 under the slogan of " no ticket, no job," and the workers at Dunsmuir and Jackson's of Govan secured a victory in spite of a doubtful Executive and the threat of a lock-out. A second issue worrying members in Hull, Sunderland and parts of Scotland was the re-appearance of the " machine question " with capstan, turret lathes, millers and borers taking the place of the planers and centre-lathes of the 'forties and 'fifties and with " handymen " instead of " labourers " as the operators. The total number of members affected was small and the policy of the Society confused. Some members opposed the new machines and new engineers altogether, others advocated a strict policy of " following the work to the new machines," and allowing no one else to touch them. Still others suggested rating of the new machines to effect stability and prevent serious undercutting of the skilled men's rates. The inexperience of both workers and employers as to the capacity and possibilities of these new processes and the varying uses made of the machines in different parts of the country added to the problem of deciding policy.

At bottom the machine question was, like demarcation disputes, a fight for jobs. It was the ever present threat of unemployment that led skilled men to strike against one another and to oppose the introduction of new methods and new workers to an industry which to them appeared already over-crowded. The technical developments in shipbuilding in the 'eighties and 'nineties and in engineering proper in the 'nineties and the first decade of the century provided new issues—demarcation and the machine question—around which this struggle for jobs was to take place. The employers, only indirectly concerned in demarcation disputes, were directly interested in the machine question. Demarcation offered a chance to throw discredit on trade unions. The new machines offered a chance to end the influence of the skilled workers' unions altogether. At Earle's shipbuilding and marine engineering works at Hull the A.S.E. members in January, 1897, after a nine months' strike, " forced recognition of the principle that machines which supersede hand-skilled labour should be manipulated by skilled and full-paid men."[11] At the Sunderland Forge and Engineering Co.'s works, however, in the same year, horizontal borers passed to handymen at a rate of 5s. and 6s. less than that received by skilled men. A strike was temporarily averted while discussions between the Executive and the Employers' Association took place, but before a decision was reached this issue was added to the many others at stake in the lock-out which started in July, 1897.

The Formation of the Federation of Employers' Associations

Parallel to the appearance in the Society of a more vigorous trade policy and a change in leadership, a strengthening of the associations of the engineering and shipbuilding employers took place. The first step was taken on the North East Coast in March, 1894, when the Tyneside branch of the Iron Trades Association combined with the Wear, Tees and Hartlepool Associations to form a Standing Committee to which all disputes throughout the area were referred. For a time the Society refused to recognise this new federation and attempted to deal separately with the thirty four firms involved. But the strong influence of Armstrong of Elswick, the leader of the employers, kept the association together and defeated the Society's hopes of splitting the employers.

In the following year with the sympathetic lock-out on the Clyde the Society had a foretaste of the tactics which the employers' associations were prepared to use. The partial success of the Society in this dispute and the current of public opinion against the tactics used by the employers did not prevent the latter from discussing extended federation. The employers held that if the whole resources of the Society could be drawn upon by one district, the employers throughout the country should also come to the assistance of one of their own side. At the same time amalgamations between individual firms—the most outstanding example being the formation of the Armstrong-Whitworth Company—hastened the trend towards federation. Finally, in June, 1896, the Employers' Federation of Engineering Associations was formed including in its ranks the Scottish North West Coast Engineering Trades Employers' Association (the Clyde), the North East Coast Federation, and the Belfast and Barrow local Associations. Headquarters were established in Glasgow and full recognition of the part played by Armstrong-Whitworth's was given by the election of Colonel H. Dyer, a managing director of that company, as President.

The Society realised from the start that it was " useless to minimise the importance of this step," since it affected virtually the whole of the 20,000 odd members in Scotland, Northern England and Northern Ireland. The object of the Federation—" to protect and defend the interests of employers against combinations of workmen "—and its tactics left no doubt in the minds of members that the Federation had not been created merely for the exchange of information. Every small dispute in which a federated firm was involved was referred to the central body and the threat of lock-out became, in the words of one member, a " hardy semi-annual event." Within nine months of its formation the Federation had absorbed more local associations, notably the Manchester employers' organisation. By March 1897, tension between the organised workers and employers was such that the Executive Council, declaring that " although we have no wish to widen the breach between ourselves and the employers, yet we think it is well to be prepared," called for a levy of ninepence per member for the " Assistance of Our Own Trade."[12]

The increasing militancy of the Society, the rapid growth in its membership and the mobilisation of the employers for hostilities could not but produce a conflict. Both sides accused their opponents of provoking industrial warfare and both protested their own innocence. The employers were described as " intoxicated with their federations " [13]and it was undoubtedly true that they took the initiative in choosing the character of the struggle and the ground on which it was to take place. At the same time it was no less evident that the Society was prepared to accept a challenge and was confident of success. " The employers have sought the quarrel," declared Tom Mann in an article in the new *Monthly Journal* in June 1897, " let them have it. Everything favours the men ; the state of trade, the prospects for the next year, the union's finances and the opinions of the members."

Unsettled disputes in the north between the Society and the Employers' Federation on the machine question were the main bone of contention in the first six months of 1897 but the issue which was eventually to embroil the whole industry was the demand by the London Joint Union Committee for the 8-hour day.

The Lock-Out

By May 26, over 100 London firms had conceded to the request of the Joint Committee for a forty-eight hour week, and in the succeeding weeks other firms followed suit. But in the meantime, the Employers' Federation which had hitherto made no headway in London was busy canvassing the firms who showed any tendency to resist the demand and, on June 5, was able to announce that a London branch of the Employers' Federation had been established, with Mr. Siemens—head of the famous German firm which had opened up a business in London—as its President. The Unions' Eight Hour Committee refused to recognise this body, and served notices on those individual firms who still refused to grant the shorter week of their intention to withdraw their members on July 3. The Employers' Federation countered by stating that this was a national problem and not merely a London one, and if the threatened strike were proceeded with they would retaliate by locking out all union men in every federated firm in the country in batches of 25 per cent. per week, commencing on July 13. And, on the enforcement of this threat, 16,944 A.S.E. members together with several thousands from other unions left work.

The struggle received great publicity in the press. John Burns, George Barnes and others did their best by letters, pamphlets, leaflets and articles to balance the bias of the papers in favour of the employers and to win support for the men.[14] The real plans of the " autocrats of Elswick," the " Pseudo-Napoleons of Newcastle," to use the London employers as the catspaw with which to destroy the trade union movement were exposed. The Society answered the allegations of unsound finance once again levelled against them by *The Times* and other newspapers. They attempted to lay the bogey of foreign competition by quotations from the employers' own mouths and figures of Britain's export of machinery. They accused the employers of spreading the conflict and bringing the engineering trade of the country to a standstill.

The employers for their part argued that the new machines were costly and therefore the workers must work them longer rather than shorter hours in order to spread overheads. They pleaded that competition from cheaper labour in Germany prevented them from shortening hours and claimed that financially the firms could not stand the increased costs which an 8-hour day would involve—this despite the fact that Armstrong's, for example, had made a net profit of £358,000 in 1896, and Palmer's Shipbuilding Yard, £52,000. The employers did their best to switch the issue from the relatively simple one of hours, to the general question of the right of the employers to " do what they like with their own." The unions were accused of retarding industrial progress by their claims on the machine question and for restriction of overtime, and the employers, wrote Colonel Dyer, " were obliged to resist the attempt made to deny to British employers the same freedom in managing their works which is enjoyed by every manufacturer with whom they have to compete."[15] The chairman of one of the largest engineering firms on the Tyne claimed that " the degrading doctrines of the new unionism have so poisoned the A.S.E. as to make them as a class fully 20 per cent. less valuable than they ought to be."[16] Finally while the Employers' Federation in an official statement claimed that they had no animosity to " legitimate trade unionism " and wanted only " freedom to manage," their real intentions were admitted by Mr. Siemens who told the press that the object of the lock-out was " to get rid of trade unionism altogether."[17]

During the first two months of the lock-out the engineers' hopes of complete victory ran high. Nearly two hundred firms had conceded the 8-hour day in London. With the exception of the Patternmakers who had left the Joint Committee before the lock-out commenced on the excuse " that the time was inopportune," and the more serious defection of the Boilermakers whose Executive refused to sanction the actions of their London members, the ranks of the men were solid and enthusiastic. By September prospects were not so bright. Colonel Dyer and Mr. Siemens brought great pressure to bear on London firms—their weakest link—to join the Federation and succeeded in making some retract the 48-hour week and lock out their men. In the provinces, too, recruiting to the Federation continued and at the beginning of October the lock-out had spread to 579 firms and 45,000 men, of whom about 22,000 were members of the A.S.E. To bring pressure on recalcitrant firms the Federation established an unofficial boycott by refusing to trade with them.

To obtain sufficient blacklegs to keep going—the largest firms were on Government orders—all sorts of measures were adopted by Federated firms. Two examples were the methods adopted by Yarrow's and the use of the Free Labour Association. Alfred Yarrow, marine engineer on the Isle of Dogs, London, attempted to keep his works going by advertising for non-union fitters, turners and patternmakers who could be " comfortably quartered out of the reach and annoyance of pickets upon the Royal Mail Steamer ' Southampton ' now moored opposite the works." He succeeded in obtaining a number of men to take these jobs, and to give the affair a high moral tone the local vicar gave religious services on board ship every Sunday at which the Yarrow family were present.[18]

The Free Labour Association was one more of the many attempts by employers to attract workers away from trade unions to associations assisted, in both management and finance, by the employers. It had started in 1893 and had provided blacklegs for a number of small disputes. Declaring that " the free labourers and employers were on the same side . . . fighting a common foe", the Free Labour Association abused the engineers and discussed methods and plans for filling the Federated shops. The " working-man " President, John Chandler, attempted to scare the public by asserting that A.S.E. members disguised as non-unionists, were entering factories to destroy machinery.[19] Claiming 182,000 members in 1897, the Free Labour Association was composed entirely of riff-raff, and, as the employers soon discovered, it was the " free labour " blacklegs who broke and damaged in a few weeks more tools and machines through inexperience than a skilled engineer damaged in a life-time. " Free Labour " was not a success; but the police and the magistrates did all in their power to assist the employers ; magistrates were singled out for praise by the pro-federation paper *Engineering* for " showing praiseworthy courage in punishing picket violence."[20]

The unions now facing a long drawn-out dispute were feeling the strain. Smaller unions, for example, the United Machine Workers and some of the local textile engineering unions in Lancashire, found themselves without funds and the A.S.E. had to bear the financial burden of other members besides its own. Measures were taken to obtain subscriptions from the public and other unions and initially the response was good. More than £28,000 was subscribed by Continental and Colonial unions, repaying the generous assistance which the A.S.E. had given in the past. Of this sum over one-half came from German unions, and special thanks were given to Eleanor Marx Aveling, the daughter of Karl Marx, for her assistance in this connection. In Britain nearly every union made a contribution of some size, and individual donations varied from the £2 and £3 from " Pleasant Sunday After-

THE ENGINEERING DISPUTE 1897: DEMONSTRATION ON EELBROOK COMMON, FULHAM.

noon " Societies to £800 from Mr. George Cadbury. Football matches and concerts added to the funds, and widespread publicity was gained by a monster demonstration in Hyde Park of 15,000 workers, with banners and bands, in support of the 8-hour day; this was followed by similar marches in large provincial towns. In all about £116,000 was raised by voluntary subscriptions.

With an important section of the industry at a standstill the Board of Trade Labour Department began to take a hand. The employers opposed intervention by the Board but after three months of negotiations both sides were brought together at the end of November. A six-day conference ended with proposals by the employers which the unions placed before their members. These proposals indicated clearly the aims of the employers—that the new techniques of production should be introduced without let or hindrance and that the only negotiation on the rates and conditions of employment to be tolerated was that between the individual worker on the one hand and the representatives of the giant limited liability company on the other. In the words of the Executives of the unions " one idea pervades the whole. That of individual bargaining between employers and workmen."[21] No recommendation on voting was made and the membership rejected the proposals by 68,966 to 752.

Following this overwhelming declaration of the determination of the engineers, the employers extended the lock-out, 27,000 A.S.E. members now being locked out and the total number of workers rising to 47,500 in 702 firms. A second conference followed on December 14th, at which some concessions were made by employers, but again a ballot vote rejected these terms as well as a suggestion for a compromise offer of 51 hours.

The problem of funds was now becoming extremely serious. Branch officers and full-time officials were giving their services free of charge and many members were making loans to the Society, but the cost of the lock-out had risen to between £25,000 and £30,000 a week. With a view to overcoming this threat to the finances of the strike, the London Trades Council, in the absence of any activity by the Parliamentary Committee of the Trades Union Congress, called a meeting in Memorial Hall, London, attended by 112 trade unions and trades councils to discuss the engineers' strike. The meeting was enthusiastic and agreement was reached that all trade unions represented should levy their members in support of the engineers. But subscriptions did not increase and the Executive of the Society felt that further levies on their own members—who had already contributed £250,000 by contributions and levies alone—were not possible.

In these circumstances the Executives of the unions once more met the employers, withdrew the demand for an 8-hour day, and secured some further concessions in the form of a clarification of what the employers intended in the proposed terms of settlement. These were submitted to the membership in late January 1898 with a recommendation that they should be accepted. The voting was 28,588 in favour, 13,927 against. After thirty weeks' struggle the longer purses of the employers had won, but a large number of the membership refused to vote at all.

The Terms of Settlement

The Terms of Settlement were harsh and were to colour the relations between the employers and the A.S.E. up to the outbreak of the first world war. The " General Principle " on which they were based was that " The Federated Employers . . . will admit no interference with the management of their business, and reserve the right to introduce into any Federated workshop, at the option of the Employer concerned, any condition of labour under which any members of the Trade Unions here represented were working at the commencement of the dispute in any of the workshops of the Federated Employers."

While no attempt was made by the employers to limit the right of workers to join a trade union, such as had occurred at the conclusion of the 1852 lock-out, the former were at liberty to employ any non-unionist. Every Federated employer was to be allowed to introduce piece-work, the prices to be fixed by mutual arrangement, but the unions secured an age-old demand that payment for piece-work on contract jobs should be made through the pay office and not by the individual piece-master. While overtime was to be limited to 40 hours in any four weeks, there were so many exceptions as to make this clause virtually inoperative.

On the question of wages, while the employers agreed to collective bargaining for union members, the latter suffered a severe blow by the rule which forbade them to " interfere in any way with the wages of workmen outside their own Unions." No limit was to be placed on the number of apprentices, and employers claimed the right " to appoint the men they consider suitable to work . . . (the machines) and determine the conditions under which such machine tools shall be worked."[22]

The final clause in the Terms of Settlement established a machinery for avoiding disputes. In cases of disagreement the employers agreed to meet by appointment deputations from their own workpeople. If such discussions proved abortive, they were to be referred to a conference of the local employers' association and the local officials of the trade union or unions concerned. Failing settlement there, the matter was then to be referred to a Central Conference of the Executive Board of the Employers Federation and the National Executive of the Union. While such negotiations were in progress, no stoppage of work was to take place, and the *status quo* was to be maintained.

Such were the terms accepted by the A.S.E. and the kindred unions involved in the lock-out. That there should be recriminations and accusations was inevitable. While a large minority were convinced that the unions could have won provided they had remained out a little longer, and pointed to the funds of the A.S.E. which still stood at £134,000 in March 1898 after all debts and loans had been repaid, others blamed the foolhardiness of the militant members in pitting the Society's strength and resources against an immensely powerful employers' organisation, and still others, in an effort to make the most of the Terms, claimed them as at least a partial victory.

As in the lock-out of 1852, one of the main reasons for the set-back was undoubtedly insufficient preparation. In both cases the militancy of the membership effectively concealed from them the potential strength of the employers. But an additional reason for failure in the second lock-out was the absence of a real working unity between the engineering unions on a national scale. In London the unity of the various societies in the Eight Hour Committee had been strong but in the country as a whole the defection of the Boilermakers and the Patternmakers, two of the most powerful engineering unions, did untold damage. The A.S.E. was not blameless in this respect. Years of demarcation disputes, added to a refusal to discuss Federation, and sink differences in the common cause, had contributed to the mutual distrust. Nor had the engineers' struggle been able to invoke the same spontaneous burst of solidarity from the working class and progressive circles as had characterised the successful struggles of the dockers and gasworkers in 1889. Sections of the A.S.E. had for too long boasted of their solid financial arrangements, contrasting them with the comparatively small resources of the " new unions," and when the " aristocrats " themselves had to appeal for support, moral rather than financial assistance was forthcoming. The Parliamentary Committee of the T.U.C. gave little assistance and many of the professional and middle-class friends of the A.S.E. deemed the struggle ill-advised and accused the Society of squandering the savings of a life-time.

That the A.S.E. suffered a major defeat, the results of which the Society was to labour under for many years, cannot be denied. But partial victory at least could be salvaged. Though the 8-hour day had been lost and the employer had secured for himself a wide range of freedom particularly in the control of the new machines, the Society had defeated the attempt to crush trade unions among engineering workers and, instead of the individual bargaining which some employers hoped would be the outcome of the struggle, the engineering industry henceforth was bound, in the workshop, locally and nationally, to organised collective bargaining.

CHAPTER VII

New Tools and Working Conditions and the Search for a Policy: 1898—1914

After the defeat of 1897-98 the engineers once again displayed their determination and tenacity to maintain and build their organisation. Premature shouts that the A.S.E. was crippled or finished and that the " Free Labour Association " of blacklegs and down-and-outs financed by the employers would take its place were shown to be hopelessly wrong. The record balance of £305,882 in the funds in 1896 was equalled within three years of the lock-out and the record membership of 91,944 in 1897 was surpassed by 1902. By 1914 the funds were £1,085,627—three times as great as before the lock-out and membership had risen to 174,253. The Free Labour Association had collapsed and its erstwhile members had crawled back to their holes. Wage rates fluctuated but in most districts stood at a higher level in 1914 than in 1897, and minimum rates were far more effectively enforced through the widespread recognition of the right of the Society to negotiate and the adoption of written agreements. Further, while the coalminers, railwaymen and dockers were fighting some of the bitterest struggles of their history, the engineering industry was relatively undisturbed by disputes.

This picture of advance, growth and consolidation concealed a painful and, on the whole, unsuccessful struggle of the Society to match in its membership, policy and organisation, the growth of the industry, the startling changes of method, the new policy and organisation of the employers, and the increased intervention of the State in social and labour problems.

The position after the 1897 lock-out was not entirely comparable to that following the 1852 defeat. In that battle the tactics of the Society were seen to be at fault but the basis and structure were sound. The policy of " build better than ever before " was well-founded and proved successful. After the 1897 lock-out the structure as well as the tactics of the Society were placed in doubt—a doubt that became greater in the succeeding years—and building on an unsound foundation made re-organisation and re-orientation increasingly difficult.

The decisions of the 1892 Delegate meeting and the election of Barnes as General Secretary had signalled the defeat of the old policy of " make do and mend " but the new policy which had been so widely trumpeted had met apparent failure at its first hurdle. After the lock-out few would dispute that a clear policy was necessary [illegible] disagreement was wide on what that policy should be. Had the lock-out proved that the strike as a weapon was useless ? Should the new national organisation of the employers be met by the Society with greater central control at the expense of local autonomy ? Should the Society continue its attempt to control the conditions of the trade by widening its basis to include all newcomers, including machinemen, or should it evolve into a sectional society of skilled craftsmen ? What methods were to be developed to meet the different tempo of workshop life and the rapid succession of workshop problems which could not wait for the cumbersome Delegate Meetings and changes of rule ? Was the new permanent Executive to become a Frankenstein dictator or a rubber stamp, how was it to be controlled and how much control was it to exercise? Finally, what should the Society do in face of the responsibility now taken by the State in social questions ?

These were some of the questions worrying the members and the remedies suggested were as numerous as the problems. The seventeen years following the lock-out was a period of search for a policy on trade, political and organisational problems, a policy which would adapt the Society to the new conditions of the industry and the country.

The Terms of Settlement and the Search for a New Trade Policy

The Terms of Settlement, seal of the victory of the employers in 1898, dominated the trade policy of the Society. In essence these terms were of two parts ; one relating to the methods of dealing with disputes that might arise between the Society members and the employers ; the other relating to particular aspects of trade union policy, such as the agreement to work with non-Society men, the acceptance of piece-work, the limitation of overtime to 40 hours a week, and the recognition of the right of the management to " manage " and to " select, train and employ those they considered best adapted to the various operations and to pay them according to their ability as workmen."

Every Delegate Meeting between 1898 and 1914 discussed these Terms and hardly a year went by without demands from the branches that they should be amended or abolished. A popular platform for any candidate standing against an office holder was the promise to remove this sitgma of defeat. The employers added fuel to the fire by declaring that the Terms were responsible for the " wonderful changes in the workshop," and claimed that industry had been emancipated from the " drags and chains " and " pretensions and tyranny " of the unions.[1]

Most of the opposition to and dissatisfaction with the Terms was directed against the trade policy clauses, for here the employers had made heavy inroads into the past policy of the Society. The machinery for avoiding disputes was also criticised, but criticised constructively, and only a minority wished to dispense with it altogether. The decision to exclude local officials, whether branch or district officers or Organising District Delegates, from the national negotiations arising from the procedure was a severe blow to the local spirit and practice of the Society. The object of the provision was stated to be the removal of discussion on any problem from the heated atmosphere of the dispute to the calmer surroundings of a Conference at which no one directly concerned was present. A compromise, signed in September, 1898, allowing local representatives from both sides to be present in a consultative capacity but not in the actual conference room, was accepted by the membership but not without doubts, particularly on the part of the Organising District Delegates.

A second major criticism of the Terms so far as the provisions for avoiding disputes were concerned was the delay in righting grievances and in arriving at decisions. No specific time limit was fixed for the progress of an issue from local to Central Conference, and " adjournment for further consideration " or consultation was as frequent as it was irritating to the workers concerned. In cases where the item was referred by the employers this delay could operate in favour of the Society, particularly where the question was a reduction in wages, but since the majority of the items were referred to Conference from the trade unions they tended to be the losers. A slight improvement was made on this point in the revised Terms of 1907—designated Terms of Agreement in the hope of removing the 1898 stigma—when the employers agreed to Central Conference " at the earliest possible date " failing settlement at local conference. The further revision in 1914, known as the York Memorandum, fixed the " second Friday of every month " and allowed any question referred fourteen days previously to be considered.

Trade Policy: Wage Rates and Payment by Results

The trade policy pursued by the Society was governed nationally on some issues, such as the machine question and piece-work, by the trade clauses in the Terms of Settlement, on others, such as hours of work and wage rates, by local agreements, while on yet others, such as demarcation, there were no agreements at all. The centralisation of the employers' organisation and the rapid changes in the trade were seen by some members as pointing the need for a comprehensive national policy. But due to the uneven development of these changes and the use sometimes made by the employers of national agreements, others preferred guerilla warfare on each of the innumerable shop questions as they arose. In this complex background the policies evolved were various and often contradictory.

Wage rates conformed closely to the general state of " trade": a boom resulted, after months of negotiations, in a rise ; a slump in a reduction. For example, the Clyde rate for fitters, which was 36 shillings in 1898, was reduced by a shilling in 1904, increased by a shilling in 1906, reduced by a shilling in 1908, and in 1910 the rate was once more 36 shillings. In the negotiations on wage rises and reductions according to the state of trade, the Society was at a great disadvantage. The employers knew all the facts about the rates, the number unemployed and the cost of living of the workers, but the Society knew little or nothing about the profits being made by the employers or the indications of the trend of trade. On more than one occasion, the Society withdrew its claim for an increase, on assurances from the employers that trade was about to decline when in fact a boom followed. But alternative criteria on which to base wage claims were not available.

References were common to the " increase in the cost of living," but no reliable index existed to demonstrate this, beyond the men's own experience, which was not considered sufficiently scientific to hold sway at Central Conference An entirely new concept was introduced by the men of the North East Coast in their great struggle against a reduction in the depression of 1908, when they claimed that their rate of 36 shillings was a minimum below which, no matter what the state of trade, wages should not fall [2] In defence of this principle they twice voted against the recommendations of the Executive and struck work rather than submit to a reduction They had made five requests for an advance between 1899 and 1904 and each time had been told by the employers that trade was about to decline The rate in 1908 was only a shilling above that of 1892, and the men were determined not to slip back further The publication of a 15 per cent dividend by the Elswick firm, W G Armstrong Whitworth & Co , immediately prior to the second ballot confirmed that determination

The strike was a failure With the Executive opposed to the principles and methods of the men, with other districts of the Society already working at a reduction, with the general public confused on the offer by Lloyd George at the Board of Trade to arbitrate, and with trade getting worse rather than better, it says much for the courage of the men that the strike lasted nearly five months and that even then 40 per cent voted against a return at a shilling reduction The first fight for a fixed minimum wage had been lost

It was recognised that this struggle by the men of the North East did much to stay reductions in other districts So much was admitted after the event by the Executive Councilmen, but the logical conclusion that wage issues could and should be fought by the districts in unison was not accepted A united fight was assumed to lead to a lock-out—the employers had hinted at this weapon—and the experience of 1897-8 was interpreted as showing the danger of such a course

In practice the gap between the districts widened after this dispute In an attempt to escape from the increases and reductions every other year, the districts " fell into the trap," as one member put it, of long-term agreements In 1908 the Hull district, after discussion at Central Conference, was the first to accept an agreement for five years stability of wages in return for a withdrawal of a demand for a heavy reduction by the employers The London district followed suit and in the following years three-, four-, and five-year agreements were accepted by others These agreements were defended on the grounds that they helped " to destroy the violent fluctuations of wages downwards,"[3] but with the continued rise in the cost of living and the trade boom in the immediate pre-war years the majority of members realised that they had suffered rather than gained Equally serious was the loose fashion in which these agreements were undertaken Neither the districts nor the Executive were concerned with co-ordination, and by 1913 the wage structure of the industry was a picture of different rates throughout the country governed by agreements expiring at different times. As a result of acceptance of long-term agreements as a lesser evil the possibility of a joint wages movement was hedged with far more technical difficulties and complications in 1914 than it had been seventeen years earlier, although in the intervening period there had been an increasing national uniformity in the cost of living and in profits.

The extension of piece-work, and the methods of its operation were treated from the start as problems on which a national policy was both necessary and possible. This was partly due to the inclusion of clauses on the operation of piece-work in the Terms of Settlement in 1898 and to the absence of any tradition of leaving the problem to the districts.

The gratuitous addition by the employers in the Terms of Settlement of the phrase " individual workmen are much benefited by piece-work " after over fifty years of struggle against the system was seen as a signal to the Society to see " as our absolute duty that the piece-worker is really benefited instead of being left to scramble for the crumbs that are left after everyone else is served."[4]

The employers had conceded in 1898 the principle of mutuality in fixing the price between the employer and workman and the payment of all balances through the pay-office. The next problem was to secure for the piece-worker what had already been won for the time-worker—payment of extra rates for overtime, a guarantee of a minimum rate below which his wages could not fall, and the right to an increase in piece-work prices in the event of a general wage increase. Without these guarantees the whole concept of a district minimum wage would be undermined.

The workers in the textile machine districts, Oldham and Bolton, where piece-work was practised to a greater extent than anywhere else in the country, took the lead on these issues at the turn of the century and forced their employers to concede these principles. The Employers' Federation refused to accept these additional safeguards in the discussions on revising the Terms of Settlement in 1901 but in the 1907 Terms of Settlement these guarantees were obtained.

The second major problem was to prevent the exploitation of the piece-worker by continual price-cutting. The employers admitted without equivocation that this was their practice, if not their policy, and the opposition of the Society to piece-work was based to a large extent on this fact. The Rules were altered in 1901 to allow contingent benefit to be paid to members withdrawn from situations through resisting cuts in piece-work prices, but other efforts were directed towards discovering some method of payment by results which would not give any incentive to reductions.

It was in these circumstances that the American foundling, the premium bonus system, was hailed by employers, Fabians and trade union officials alike as the solution to the difficulties. With rather indecent haste the Executive signed the " Carlisle Agreement " in 1902, by which all restrictions on the working of the premium bonus system in federated shops were to be removed in return for guarantees regarding overtime rates to piece-workers, a minimum wage, and a guarantee that prices once fixed "should only be changed if the method or means of manufacture" were changed.

The members were asked to give the system "a fair and honest trial,"[5] but the branches rushed in protests. The Executive explained that as the system was already in operation they were merely doing their part in obtaining the best possible conditions. Sydney Webb wrote a prominently displayed letter to the October *Monthly Journal,* in which he described the day-rate method of payment as "crude and inaccurate" and "the premium bonus system, as provisionally agreed, . . . an admirable expedient," adding "The A.S.E. may, in my humble opinion, safely agree to it."

The Executive decided that discretion was the better part of valour and the Agreement was not put to a vote of the members. Yet it remained an agreement and one Executive Councilman explained that while it was "not binding upon the A.S.E. in its collective capacity if the employers laid it upon the table at a Central Conference the Executive Council must accede to it."[6]

Protests against the Agreement increased with wider adoption of the system but the Executive maintained its refusal to put the matter to the vote. Eventually, in 1910, in response to protests from the smaller Societies, the Trades Union Congress appointed a sub-committee to examine the workings of the system, declared against it, and instructed the Societies concerned to take votes of the members on their views of abolition, by strike if necessary. A three-to-one majority in the A.S.E. were in favour of strike action, and the total vote of the kindred trades concluded in 1911 was 95,738 for its abolition with only 9,965 in its favour.

"Piece-work was bad enough but premium bonus is worse" was the viewpoint of the members, and the Editorial in the August *Monthly Journal* of that year put the matter politely and succinctly:

> "Those who believed that it (premium bonus system) was introduced to benefit the workers must by this time realise that they were either deceived or misinformed . . . premium bonus has only one use . . . it enables the employer to keep back from the worker, or part of it, that which would be his due under a piece-work system."

Dissension among the societies held up action following this overwhelming vote, and although the A.S.E. was the largest Society concerned and the only one to have an agreement on the system with the employers, the Executive declared in March, 1912, that the A.S.E. "was not going to lead on this matter. They had done so before (on the 48 hours movement) and had been left in the lurch by their quondam allies."[7]

The Delegate Meeting of 1912 instructed the Executive to take a vote on the ending of the Carlisle agreement. This resulted in a five-to-one majority in favour of its abolition, and on April 1, 1914, the agreement was finally ended. The best that can be said for this unfortunate agreement was that it introduced the principle of no cuts in piece-work prices or times, except under specific circumstances.

The Machine Question

The third major trade question before the Society in these years was the "machine question." The policy of "claiming a right to the tools of the trade" had received a severe set-back with the defeat of 1898. But the problem of who was to man the machines and at what rates, remained and increased in magnitude and complexity.

The employers, as had their forerunners over fifty years earlier, saw the new tools as presenting an opportunity to lower wage rates "in the interests of economical production." The skilled men would not work the new tools below their established skilled rate, so that employers, operating their right "to select and train" their workers, started flooding the shops with handymen and boys. Under a system where a new influx of labour meant greater production there would have been little difficulty beyond temporary maladjustment. But under a system where influx at one end meant unemployment at the other, compromise was difficult if not impossible.

The Society claimed that apprenticeship to the trade meant the right to a job in preference to those who had not served their time, and maintained that the skilled rates achieved through years of struggle must not be lowered. They could not stand by and watch the employers training youths to operate the new turret lathes while apprenticed turners tramped from town to town, their skill and spirit rusting from unemployment.

This conflict of outlook was aggravated by the lack of trade union organisation among the handymen, which allowed rates little above those of labourers to be fixed for the new tools, and by the conservatism of some of the craftsmen, who considered operating the new machines below their dignity.

In 1907, the Societies that were signatories to the Terms of Settlement—the Steam Engine Makers' Society, the United Machine Workers' Association and the A.S.E.—managed to secure the addition of a phrase to the section relating to manning machines which read:

> "The Federation recommend their members that . . . consideration should be given to the case of workmen who may be displaced, with a view, if possible, of retaining their services on the work affected or finding other employment for them."

But the addition remained a form of words, and in 1912 the Executive could say "it is well known that this recommendation has been ignored."[8] Further discussions were started in the same year with the aim of strengthening the recommendation because the position of the skilled members was becoming increasingly undermined with the spread in the use of the new tools. The Executive made a determined attempt but after four meetings of Central Conference, including some of the longest sittings on record, the employers refused to move from their claim of "absolute freedom of management" and the right to "select, train and employ those whom they considered best adapted" to work the tools, irrespective of the social and industrial consequences.

The failure to achieve any improvement in the Agreement through national negotiations and the absence of any other defined policy led the members to adopt isolated shop tactics. The phrase regarding the employer's right to train was taken literally and members refused to assist or instruct newcomers in any way. Training was treated as the employer's responsibility to pursue as best he could. Similarly the employment of a handyman at a low rate on roughing out for a skilled man who had hitherto performed the complete operation was resisted by the refusal to " follow " or rectify a handyman's job.

These tactics were, from their nature, spasmodic and irregular and, though understandable, were far from a satisfactory or effective solution to the problem. Nor did the abolition of the Terms of Agreement in 1914 bring the solution nearer, for while the obnoxious wording was gone the practice was more firmly established than ever. Aggressive, almost despairing, statements, such as the one issued by the Manchester District Committee in 1906 : " The time has come when the engineering industry should cease to be the happy hunting ground for handymen "[9] scarcely squared up to the realities of the situation, but other members, as yet in a minority, were pointing to more practical possibilities. For example, in 1907, a member could say, " In view of the Terms of Settlement, the machine question resolves itself into the price to be paid for working the various machines "[10] and the corollary to the approach of " rating " the machines was suggested by another member in 1912, who wrote :

> " instead of wasting time and energy in putting forward sentimental reasons why tradesmen should be allowed to man certain machine tools, we should make the conditions of entry into our Society easier . . . and so get all the workers in the engineering industry, both skilled and semi-skilled, into the A.S.E."[11]

But this far-seeing minority received little support.

Hours of Work and Demarcation

Although the length of the working week was not governed by the Terms of Settlement, the demand for the 48-hour week remained in the background for fifteen years. The attempt by a number of the employers to introduce the " one-break " system with a slight reduction in hours temporarily revived the spirit of the demand for the 8-hour day but did not lead to any action. The Executive negotiated a provisional Agreement in 1907 that no opposition would be offered to the introduction of the one-break system providing that the hours were reduced to 51 per week, without a reduction in wages. This was an admission by the employers of the Society's contention in 1897 that the two hours worked before breakfast was uneconomical, and also represented an advance on the negotiations of 1901 when the employer wished to introduce the system without any reduction of hours. The members, however, glimpsing in this Agreement the issues on which they had fought so solidly in 1897 refused to endorse it, in spite of the unprecedented step taken by the Executive in stopping one ballot and the issue of a statement on the advantages to be gained by the acceptance of the Agreement, which stressed that :

> " The principle of collective bargaining through negotiation is at stake . . . We, as your representatives and spokesmen are . . . morally pledged . . . to the terms of the memorandum, and its rejection would weaken us not only individually but would weaken anyone who at any future time should be called upon to negotiate on your behalf."[12]

The members felt that this Agreement was a negation of the spirit of '97 and would undermine the position in Government and private establishments already working one break with 48 hours. The second ballot taken showed a more than two-to-one majority against the proposed Agreement and it was therefore left unsigned.

Five years later, through the Federation of Engineering and Shipbuilding Trades, an approach was made by the Engineering Unions to the employers for a 48-hour week. Wide publicity was undertaken by the Joint Movement [13] but delays in negotiations occurred, and before the discussions, which the unions considered were progressing favourably, could be translated into an agreement, war was declared against Germany and negotiations suspended.

Greater progress, at least in national agreements, was made in reducing overtime. While the phrase " systematic overtime " had disappeared from the vocabulary of the Society through the acceptance under the Terms of Settlement of overtime up to 40 hours a month —practically two hours a shift—opposition to overtime continued and in the 1907 Terms of Agreement the amount was reduced to 32 hours. But the " urgency and emergency " clauses remained and in some districts were so operated as to make overtime practically unlimited. An interesting flash-back to the stricter overtime policy of half a century earlier occurred in October, 1904, when a rule that " In no district shall overtime be worked on new work whilst there are members of the same trade signing the vacant books and receiving the benefits of the Society " was accepted by Referendum vote of the members. But within a year this policy had proved unworkable and a special meeting was called to consider its deletion. This was agreed, delegates pointing out that with the specialisation of processes unemployed members could not necessarily perform the work done by those working overtime, and that in some trades, moulding and pattern-making for example, overtime on new work in the early stages " had the result of putting other members in work."

Demarcation disputes pursued their sordid way throughout these years. Everyone was willing to condemn them, but little progress was made towards their elimination. There was scarcely a trade against whom charges were not made by the Society and counter-charges were as frequent. New developments in shipbuilding such as Parson's marine turbine led, almost inevitably, to a demarcation squabble as to whether brass finishers or fitters were to blade the turbines. The policy of the Society remained on the somewhat low level of urging members to watch " the pilfering propensities of other trades " and to be " always energetic and on the look-out for the poacher."[14]

Happily few of these disputes reached the stage of a serious strike, though untold damage was done to the growth of unity and co-operation between the kindred Societies. The disputes were settled sometimes by arbitration through the Federation of Engineering and Shipbuilding Trades and sometimes by the employers. In 1912, after negotiations lasting four years, the members agreed to the establishment of a National Demarcation Board, on which two Federations of the employers and twenty one unions were represented. This was an important step forward and the A.S.E. in particular hoped to be more favourably treated than had been the case in arbitration by other unions.

The day-to-day shop questions had increased in number with the changes in workshop practice which were being made with the development of new tools and methods of organisation. The issues varied from shop to shop and district to district and co-ordination of policy was difficult if not impossible. District Committees attempted through District By-laws or, in ports, through Port Rules printed and issued to every member, to defend and improve the position of the members. These By-laws dealt with matters such as overtime allowances, dirty money, travelling allowances, local piece-work and bonus rules and trial trips. In some districts they were accepted by the local employers. In others they remained " pious aspirations." Moreover, these rules, detailed though some of them were, did not cover the finer workings of the machine and piece-work agreements, or the growing number of disputes regarding works policemen, clocking-in, clocking-out and job cards. Policy on these questions depended on the strength of the Society in the particular shop.

The Search for New Methods

A co-ordinated trade policy was conspicuous for its absence. There was a wages policy decided from district to district and year to year, as one member expressed it " on the spur of the moment " ; a policy on piece-work, opposed and resisted by the membership ; no action on the shortening of the working day ; a machine question which seemed insoluble ; demarcation continuing to absorb energies and time which might have been more profitably spent elsewhere ; and opposition to speed-up in the shops being left to the members' own initiative. In contrast, a definite policy was attempted by the leadership regarding the methods to be used to solve the problems. These methods were recognition of the new apparatus of collective bargaining, conciliation and arbitration rather than strikes when it failed, and joint action with kindred and other unions through federation and amalgamation.

The emphasis placed on negotiation and the collective-bargaining machinery arose partly from the recognition of the fact that the Employers' Federation had come to stay, and partly from the need to introduce a more orderly method of dealing with problems when over 100,000 workers were involved. This viewpoint was strongly expressed by the Executive and was, by and large, supported by the membership.

The emphasis placed on conciliation rather than strikes had different roots. It arose partly from the severe legal disability under which the trade unions were placed between the Taff Vale decision in 1901 and the passing of the Trade Disputes Act in 1906, and partly from the conviction that the building of an independent working-class party in Parliament would yield more lasting results than the best conducted strikes. This viewpoint found far less support among the rank and file of the membership.

The attempts to develop closer links with other sections of the working class arose from a recognition that the Society no longer represented the whole of the engineering industry, and that the combination of the employers and increasing intervention of the Government in industrial issues called for greater combination among the workers and a united approach to the wider problems of the State. This policy found general support throughout the membership.

Procedure, Opposition to Strikes and Parliamentary Action

The support for some recognised and national machinery for dealing with trade questions was shown in the vote taken in 1914. After nearly seventeen years of denunciation of the "shackles" of the Terms of Settlement, the membership agreed within two months of their formal abolition—encouraged it is true by the bait put out by the employers that agreement on these terms would speed agreement on the 48-hour week—to replace the old Agreement by the York Memorandum relating specifically to "provisions for the avoidance of disputes." The wording was an improvement but the central idea of this Memorandum had been contained in the 1907 Agreement, which, in its turn, had been adapted from the 1897 Terms of Settlement. The principle of national agreement on the machinery of negotiation had come to stay.

Acceptance of conciliation and opposition to strikes was strongly coloured in the first five years of the century by the decision of the House of Lords in the Taff Vale Case in 1901. This decision, which awarded £23,000 damages against the Amalgamated Society of Railway Servants for the loss incurred by the Taff Vale Railway Company in an unofficial strike by members of the union the previous year, was a severe blow to the freedom of trade unions. The leaders of the engineers' and other unions, and the majority of the members felt that this decision—until reversed by an alteration of the law—was sufficient reason to avoid strikes. The contrary policy might involve the whole funds of the Society in law suits and damages. This threat was not removed until the passing of the Trade Disputes Act in 1906.

This Act did not, however, lead to greater readiness to take strike action, for the Taff Vale decision had been only one of a series of factors which had led an active section of the Society to look to Parliamentary action as an alternative to industrial strikes. The Rules allowing political action by the Society had been widened in 1892, but it was not until 1900 that any important steps were taken. In February of that year the Society was represented at the momentous meeting in London of the Labour Representation Committee, forerunner of the Labour Party and part inheritor of the Labour Representation League of 1869 on which William Allan and William Newton had served. The experience of the workers since 1869 and the changed position of capitalism in Britain directed this new movement along the path of independent working-class action and the decision of the House of Lords in the Taff Vale Case convinced waverers that this was necessary. The membership of the Society endorsed the Labour Representation Committee and in 1904 the first levies were taken in its support. Parliamentary candidates were chosen and in the 1906 election the Society had five candidates in the field in addition to supporting John Burns, then standing as a Liberal. Burns was returned again, and George Barnes succeeded in unseating A. Bonar Law, the future Prime Minister, at Hutchestoun and Blackfriars, Glasgow, and Charles Duncan, who besides being a member of the A.S.E. was Secretary of the General Workers' Union, was returned for Barrow.

A section of the members and the leaders saw in this victory and the strengthened Labour Party in the House of Commons, the alternative to industrial disputes. George Barnes was now one of the leading exponents of these views. " I am in favour," he wrote " of orderly and peaceful arrangements being made with employers . . . whenever and wherever possible, so that we can the more effectively cement the labour force and focus them on Parliament . . . We shall probably find that we need not strike at all except through the ballot box."[15] Frank Rose was even more specific. He was of the opinion " that never again would the workers win a strike, or if they did, they would get nothing out of it . . . only through the agency of a new political Trade Unionism did he see any hope for the workers."[16] Other members supported political action but did not share so fully in the belief that the day of an aggressive trade policy was over. Tom Mann expressed the opinions of many when he wrote in 1908 from the other side of the globe, where he was organising in Melbourne:

> " I am unable to share in the tendency I see clearly asserting itself of relying almost exclusively upon political action for the solving of the economic problem."

This doubt was increased by the failure of the handful of Labour M.P.'s to achieve any startling results in the House. In the slump of 1908 the unemployed were in the same desperate position as they had been without Labour men in Parliament. Enthusiasm was waning and one member suggested that " the most charitable thing that can be said about political action is that it is slow, so slow that it breaks men's hearts."[17]

The Osborne judgment of the House of Lords in 1909 made the existing method of levying members of the Amalgamated Society of Railway Servants for political purposes illegal, and a subsequent injunction obtained against the A.S.E. by a member called John Wilson on the same issue prevented direct financial assistance to the Labour Party except through a voluntary fund. By the time this difficulty had been overcome by the Trade Union Act of 1913 the temper of the members regarding support for the Labour Party had changed. A majority were in favour of some sort of political action but a levy for the Labour Party was rejected. The philosophy of " direct action " rather than Parliamentary action had gained much ground among the members and questions such as " Is Parliament worth capturing ? " were being discussed. The Labour Party's record was not considered very creditable and " political sham fighters " and " nothing but Liberals " were two of the epithets used. One member suggested that the list of what George Barnes and Charles Duncan had done in the House since 1906 " could be inscribed on one side of a threepenny piece."[18] The actions of the Labour Party had not lived up to the spirit of the resolution moved by J. J. Stephenson, of the A.S.E. Executive and carried at the Labour Party Conference at Hull in 1908 :

> ". . . the time had arrived when the Labour Party should have as a definite object the socialisation of the means of production, distribution and exchange . . . and the complete emancipation of Labour from the domination of capitalism and landlordism with the establishment of social and economic equality between the sexes."

Federation and Amalgamation

" Federation," the cry of a few before the lock-out, became the cry of the many after the defeat. The strength of the employers was held to derive from their " federated " method of organisation and the financial weakness of the Society from lack of systematic support from other unions. " If the trade unions do not federate, they will be crushed and if they federate they cannot be beaten," was considered obvious, and the Society ended the indecision which had marked its policy on this issue since 1892 and took a leading part in the discussions set on foot by a special meeting of the T.U.C. early in 1899 on the most effective method of federation. In July of that year the " General Federation of Trade Unions " was formed, with Isaac Mitchell of the A.S.E. unanimously elected the first General Secretary. The objects of the Federation were " to uphold the rights of combination of labour . . . and to secure unity of action amongst all societies forming the Federation," and a fund was established " for mutual assistance and support and for carrying out the foregoing objects."

This Federation was not a success. At the initial meeting only 300,000 unionists were represented instead of the million that had been expected and growth was slow. The A.S.E. delegates found themselves being outvoted by combinations of other smaller unions and the Management Committee grew increasingly powerful and self-complacent. The relative absence of disputes between 1900 and 1910 encouraged this complacency and in 1905 a rank-and-file delegate from the A.S.E. to the Annual Meeting reported that at the meeting, which lasted only ninety minutes on the first day and four and a half hours on the second, " One sees the same old faces, ample waistcoats and gold watch-chains, accompanied by fat cigars and the business is not taken as seriously as it might be."[19] By 1907 the Federation was described as a " white elephant " and members began to realise that hopes of strength through this Federation were no longer attainable.

The Federation had not brought the trades closer together, nor formulated a policy of action. All that was obtained from affiliation was an extra five shillings a week to men on strike. " We have made the conditions under which we fight easier while the fight lasts, but we have not in any way enhanced the prospects of victory," wrote the editor of the *Monthly Journal* in October, 1911. Eventually, in 1915, the Society withdrew.

The early hope that the General Federation of Trade Unions would prove to be a powerful unifying force in the trade union movement led the members of the Society to doubt the need for continued affiliation to the Trades Union Congress. The inactivity of the Parliamentary Committee of the T.U.C. during the lock-out had aroused much ill-feeling among the engineers and the Society moved a resolution condemning this inaction at the 1898 Congress, and in 1899, when the Parliamentary Committee upheld a complaint by the infinitesimal Co-operative Smiths' Society against the A.S.E. for black-legging during a strike, the membership endorsed the proposition to leave by a large majority. This decision was reaffirmed in 1902, much play being made of the affiliation of the Society to the General Federation of Trade Unions and to the Labour Representation Committee as the industrial and political arms of the working class movement.

In 1905 the members decided to re-affiliate, though in the opinion of many members the T.U.C. was " an interesting survival of times and methods that are passing away." The Congresses were far from workmanlike, " repeating the same resolutions year after year " and the methods of the Parliamentary Committee were still those of William Allan and Robert Applegarth, " a monotonous round of deputations cap in hand . . . to Ministers and Members of Parliament,"[20] ignoring the possibilities of the fledgling Labour Party. Once more, in 1907, the membership decided to leave the Congress but the failure of the General Federation of Trade Unions, culminating in the decision to leave it in 1915, forced a reconsideration of the role of the T.U.C. and in 1918 the members decided to affiliate once more.

The A.S.E. had held aloof from the Federation of Engineering and Shipbuilding Trades when formed and in the general cry to federate after the lock-out, affiliation to this body was not seriously entertained, as it was felt that little would be gained by linking with societies all liable to be affected at the same time by action of the employers. The General Federation scheme, on the other hand, because it included workers in all trades was thought to ensure more effective mutual assistance. However, in 1905, without much enthusiasm and for rather negative reasons, the Executive Council recommended joining the Federation, as being "in the best interests of the Society." This view was endorsed by the branches.

While Federation at the top assisted the development of joint movements such as the demand for a 48-hour week in 1913, united activity in the localities brought the question of amalgamation once more to the fore. Strife with sectional societies on demarcation issues and the slow and cumbersome machinery of federation readily convinced members that further amalgamation was necessary, but the chief problem was "How?" Two methods were tried. One was by direct approach to certain societies to discuss the advantages of amalgamation, and between 1893 and 1915 some ten sectional societies were approached and six of them joined the A.S.E.[21]

The second approach was a general one to the Federation of Engineering and Shipbuilding Unions. In 1910 the A.S.E. tabled a resolution at the Federation meeting:

> "That, in view of the strong and almost impregnable position of the employers in the engineering and shipbuilding trades through their combination and control by one executive authority, this meeting decided that the time has arrived when the various organisations in each section of kindred trades should combine by amalgamation."

The Federation rejected this resolution on somewhat flimsy pretexts and recommended as an alternative "closer unity through federation." But the years of experience of various federations had convinced the Society that amalgamation was the only possible way and the Executive appealed to "all members to work without ceasing and so arouse a healthy opinion among the members of other unions for amalgamation that . . . will not be stultified by the positions and claims of officialdom."[22] Local "Amalgamation Committees" were established in centres such as London and Manchester and 1914 saw some results. Groups of members of other societies were coming over to the A.S.E. —with cries in the background of proselytising—and imaginative and generous schemes of amalgamation of the engineers, boilermakers and ironfounders were being discussed in the *Journal.* But the war delayed the harvest.

The Search for New Forms of Organisation

The transformation effected in the tools and industrial organisation of the industry in these years, and the changes in the methods of collective bargaining and of the problems discussed made essential an adaptation of the framework and outlook of the Society itself. Constitutionally this period was one of attempts to rebuild the Society and to carry further the measures taken in 1892 to streamline its structure in the light of new conditions. Not an easy task under any circumstances, and the contradictions of the national trade policy on some issues and its absence on others made the task doubly difficult and the strain on the Society doubly severe.

In the workshops and the districts the Organising District Delegates and the District Committees attempted to cope with the changes. To a certain extent they were successful, but their successes tended to divert the Organising District Delegates from their original function and to bring the districts into conflict with the Executive, whilst their failures indicated the need for new methods and new principles of organisation.

The life of the Organising District Delegate confronted with demands from the districts, branches and workshops to defend the members from the onslaught of piece-work systems, speed-and-feed men, clocking-in and -out, job cards and pilfering by other trades, became a whirl of rushing from town to town, firm to firm, leading deputations and of interviewing employers. Organising, as such, recruiting to the Society and assisting the isolated groups of members in the " black " shops, became less and less possible. " Peace agent, mediator and commercial traveller "[23] rather than organiser became their function in practice, and even in this role they had to make apologies for unopened letters and unfinished business. The 1912 Delegate Meeting recognised this problem in part by increasing the number of O.D.Ds. from eight to twelve and the York Memorandum of 1914 removed a further obstacle by granting the right of Local Delegates to interview the management of federated establishments.

It was, however, not only the number and diversity of workshop and district problems which called for improved methods but also the new procedure for dealing with them. The number of conferences with the employers increased. Central Conferences, for example, increased from an average of fifteen per year in 1898-1902 to thirty three per year in 1910-14. These conferences tended, through the use of shorthand notes and the removal of Central Conference from the heat of the dispute, to place as much stress on carefully collected and documented evidence as on the strength and militancy of the workers concerned. The employers had little difficulty in collecting this evidence; the Society had to build machinery. One member was denouncing in 1907 " the crude methods in vogue in many instances whenever a difficulty crops up of everyone being set to work scrambling for information so as to present something like a case. . . ."[24] and more orderly and effective methods were advocated. When the employers at Central Conference could claim they had evidence to show that a No. 16 Herbert turret lathe was operated by semi-skilled men in thirty nine out of forty six different districts in 1907 while the Executive had no information at all, it was time some improvement was made.

The District Committees assisted in the collection of information by circulars and questionnaires to branches, but the steady increase in the number of shop stewards from 1909 onwards was the most effective answer both to this problem and the one of tackling immediate grievances and changes of practice which would not wait for the Organising District Delegate to be summoned from a distance. Shop stewards had been recognised in the 1896 Rules as having a function in the Society, but for many years they were unknown outside Scotland and Belfast, and their functions were limited to ensuring that members remained in benefit and that newcomers were Society men. By 1909 some shop stewards had been elected in most of the major centres of the industry, and the 1912 delegate meeting recognised their increasing importance by raising their payment from two shillings to three shillings per quarter. The growth in the number can be shown from the total expenditure of £68 17s. 0d. on fees for shop stewards in the three centres Glasgow, Manchester and Leeds in 1909, compared with £152 in 1913 and £208 in 1914.

These slow improvements in the effectiveness of the day-to-day machinery, vital as they were to the fighting qualities of the Society, were overshadowed in importance by the problem of achieving greater unity in an organisation faced with a national Employers Federation, and of establishing satisfactory relations between the Society and the semi- and unskilled workers who were entering the industry in large numbers.

The latter question came up for discussion at the 1901 Delegate Meeting held at Manchester, and a decision was taken by a small majority to widen entry into the Society further by forming a new section of membership—the Machinists' Section. This allowed semi-skilled workers who had been employed in the trade for two years and received not less than 75 per cent. of the district rate to join, paying lower contributions and receiving smaller benefits. No sooner were the minutes of the day's proceedings published than branch after branch sent in resolutions on the matter to the Delegate Meeting, which was still sitting. Altogether 156 were received, and before the Meeting finished its forty-three-day session it was clear to the Delegates that the membership were not prepared to adopt their policy. Nearly 80 per cent. of the resolutions were in strong opposition to the Machinists' Section. In face of this opposition, the new rule, the success of which depended entirely on the goodwill of the rank and file, while not withdrawn was largely inoperative. Only 4,000 had been recruited into this section by 1904 and George Barnes noted that " the average A.S.E. member has indicated in the most unmistakable manner that the A.S.E. shall remain an organisation of the fully skilled and trained men " and he added, " I believe he is wrong."[25]

A still more revolutionary decision at the 1912 Delegate Meeting to admit unskilled workers by adding a further Section—Section F—met with even greater resistance from the membership. After a few years of argument but little recruiting, the Section was abolished in 1917.

While one member could suggest that the Machinists' Section, if operated, would be the solution to the " machine question " and that such members would be financially " profitable as rarely on the vacant book," the branch officers, shop stewards and members did not look further than the fitters, turners, planers and smiths for their recruits. It was recognised that the semi-skilled workers had come to stay in the industry but broadening the base of the Society was compared with the widening of a river which becomes so broad and shallow that it develops into a swamp. A Society of skilled men alone, on the other hand, was seen as a deep, swift-running powerful stream.[26] This viewpoint despite the alterations in rule remained dominant up to the outbreak of war in 1914.

Conflict in the Society

The greatest internal conflict in the Society arose from the struggle to adapt its constitution and policy-making machinery to meet the national policy and organisation of the employers and the national methods of collective bargaining which had replaced the local methods operating up to the 1897 lock-out.

Two problems, which in effect were different sides of the same penny, were raised. The first was to secure the "loyalty" of the members and the districts to the leadership and decisions of the Executive Council, upon whom the responsibility for deciding policy increasingly fell; the second was to secure the "loyalty" of the Executive to the rank and file, and make it responsive to the feelings and wishes of the huge membership. Such problems had faced the engineers before but the sharp changes in the industry and the strength of the employers made their solution difficult and painful as well as increasingly urgent.

Nationally, the gap between the Executive Council and the members was seen in the rejection in practice, and later by vote of the members, of the Premium Bonus Agreement of 1902, and of the One-Break Agreement of 1907 after its complete acceptance by the Executive. The first important local issue on which there was conflict was the attempt to reduce wages on the Clyde in 1903. Noting that reductions had been accepted in other districts, the Executive recommended that the Clyde should accept a shilling wage cut. The Clyde members held two ballots on the subject and each time rejected this advice and finally struck work. The Executive then stopped benefit being paid to the men, ordered the monies that had been paid to be refunded and finally secured the resumption of work at the reduced rate. In their statement on the dispute the Executive claimed that:

> "the men have been saved from themselves and a useless squandering of the Society's money had been prevented. . . A much needed lesson in trade union discipline has been taught."[27]

They pointed to the gains in many districts through the Central Conference machinery and demanded that the members accept loyally decisions made at these conferences in the same way as the employers abided by decisions for increases in the past.

The membership failed to consider themselves as "saved" and all four members of the Executive who were up for re-election in the summer were defeated—the first time there had been such a decisive rejection of sitting members and the election of comparative unknowns. The following year, the Final Appeal Committee gave decisions against the Executive and ordered benefit to be paid to the Clyde men who had stopped work.

The Annual Report of 1903 referred to these events as denoting "an amount of dissatisfaction and unrest unprecedented in the Society's history" and described them as "the clashing of two antagonistic principles; centralised authority and local autonomy. The first has been imposed upon us by modern conditions and the second has been to many one of the prized features of the Society since inauguration 53 years ago."

But description and diagnosis of the trouble did not solve the sickness. In 1906 the Manchester District Committee and in 1907 the Erith District Committee were suspended for refusing to accept recommendations of Central Conference and of the Executive Council. The most dramatic conflict arose in 1908 over the refusal of the men on the North East Coast to accept the policy of the Executive. Rather than be a party to this strike against the express opinion of the Executive, and " to the setting up of a part of the Society as above the Society as a whole " George Barnes resigned his position as General Secretary.

In a statement giving the reasons for his actions Barnes said:

> " there had been the development of an undemocratic feeling in the trade unions which worked out in the direction of mistrust of officials and officialdom. . . . It seemed to him only reasonable on the part of the employers, on the part of the community, on the part of everyone outside trade unionism to say ' alright, we shall give you recognition but we must have some agent through whom that principle can be given effect to.' "[28]

The North East Coast men, Barnes claimed, had by their votes and action negated this essential principle of collective bargaining.

The Executive Council did not follow Barnes by resignation and the sum total of his action was to weaken the men on strike and to deprive the Society of one of the most efficient and able secretaries since William Allan. It did not lead to a solution of the difficulty, which could not be resolved by stressing the importance of collective bargaining alone or, as Barnes was willing to see, increased power in the hands of the Executive Council. The matter could only be settled by developing machinery which would ensure greater confidence in the Executive and closer contact between the Executive and the rank and file. Further, some solution had to be found to the long standing contradiction between the powers given to the local committees to make wage demands—the most important of all trade questions—and their complete dependence on the Executive, national in outlook and policy, for permission to carry the demands through to a conclusion.

The negative check on the actions and policy of the Executive Council was through the General Council, or as it was known after 1901, the Final Appeal Committee. More decisions were given against the Executive Council in these years than in any previous period in the Society's history. Between 40 and 50 per cent. of the decisions of the Executive were reversed at each Committee meeting. But such a method of controlling the policy and actions of the Society in retrospect was clearly of little value, and other methods were discussed and experiments made.

The Delegate Meeting, costing up to £3,000, meeting irregularly, and able to direct policy only by amendment to the Rule Book, also appeared unsatisfactory to many members. Criticism was made of the cost, the lack of participation by the rank and file, its unwieldy composition, and the absence of effective discussion and decision on policy.

The first experiment made was to abolish the Delegate Meeting altogether and in its place elect a " Representative Meeting," which had the responsibility of sifting all the suggestions for amendment to rules made by the branches and putting the proposals most worthy of consideration to a referendum vote of the members. Such a system —the Referendum—was held to reduce cost and increase the power of the rank and file. In practice when it was tried in 1904, it was found that expense was in no way reduced, only 9-10 per cent. of the membership voted and the decisions endorsed the view of the representatives in every case. The Referendum did not show the advantages claimed by its supporters. Two years later, when the members were faced with a choice between a Delegate Meeting or a Representative Meeting with a Referendum, they gave a small majority of 500 for the former. The 1907 Delegate Meeting searched, but failed to find a solution to the problem.

The Movement for Reform

The resignation of Barnes, the speeding-up in the shops, which, as one member put it, " makes loyalty more difficult," and the general industrial unrest throughout the country which spread increasingly from 1910 led to further efforts by the membership to face and solve the problem. In a far-sighted contribution in the *Monthly Journal* in September, 1910, J. T. Brownlie could write, " The most unpopular body within our borders is the Executive Council," and although it was democratically elected with clearly defined powers it was " in reality an autocracy." He went further. He pointed to the impossibility of District Committees formulating policy " in these days when capital is organised into combines, trusts and syndicates with national and international ramifications " and the equal impossibility of an Executive Council of eight, however conscientious, interpreting the wishes of over 100,000 members. The solution he thought lay in the creation of an entirely new body, a General Council or National Committee, which would meet solely to receive a report from the Executive on its stewardship and discuss and formulate the general lines of future policy for the Society. In cases of emergency, such as the resignation of Barnes, the body could be called upon to determine what action should be taken rather than hold a post-mortem, as was done by the Final Appeal Committee.

" A.S.E. Reform Committees " formally or informally began to appear in the chief centres to discuss what was to be done to revive the Society, which was considered to be " without a national policy " and was " more commonplace than in any previous period of its history."[29] Brownlie's suggestion, or the variation of it that an " Annual Meeting " should be held, received support, and nearly one hundred branches proposed amendments to the rules to be discussed at the 1912 Delegate Meeting along these lines. At the same time much criticism was made of the Executive Council, which was far from constructive and often vindictive. The worsened position of the engineers, no longer the " aristocracy of labour " whether measured by wage rates, working conditions, or as leaders of the trade union movement, and the supine policy followed was compared with the great battles in the coalfields and on the railways and held by many members to be the sole responsibility of the Executive.

But the engineers were not alone in questioning the policy of their leaders and the structure and aims of their organisation. In the years immediately preceding the war the whole trade union movement was in a ferment and doubts were being cast on the orthodox industrial and parliamentary methods of the previous decade, which were held to have worsened rather than bettered the position of the workers. Once again it was the engineer Tom Mann, among others, who was leading and teaching them " Direct Action," Industrial Unionism and Syndicalism. These ideas did not penetrate deeply in the ranks of the engineers at this stage but the general ferment which gave rise to these new policies affected the engineers no less than the builders, coalminers and railwaymen.

It was in this atmosphere that the delegates assembled in Liverpool in June, 1912, for the thirteenth Delegate Meeting of the Society. The opening days showed the rift between the Executive and the delegates, the Council offering very little assistance on the immensely difficult problem of adapting the Society to conform with the National Insurance Acts, and the delegates in the tone of their requests to the Executive for information hardly showed a co-operative spirit. The decisions taken on organisation were for the election by the membership of an " Independent Chairman " of the Executive Council instead of one of the Councilmen being elected as hitherto, the reduction of the Executive Council to seven, an increase in the number of Organising District Delegates to twelve, provision for the election of four full-time secretaries in London, Manchester, Glasgow and Newcastle, and the opening of the ranks of the Society to unskilled workers. The suggestion for an " Annual Meeting " was supported but referred to the branches for fuller consideration. Arising from the need to make the rules conform with the Insurance Acts so that the benefits of the Acts could be administered to members through the Society, the Delegates found it necessary to rule that an election for the entire Executive Council should take place in January, 1913, although some of the sitting members had only just been returned to office.

The reaction of the Executive was immediate. On the basis of resolutions from branches protesting against some of the new rules, they appealed to the membership at large over the heads of the delegates on a number of points, including the decision to hold a fresh election for the entire Executive Council. This appeal, backed by an " unprecedented circular," in which only one side of the case was put, was successful. The members endorsed the objections of the Executive to certain of the new rules and the Delegate Meeting was recalled in December to retract their decisions. This they unanimously refused to do, claiming that the Delegate Meeting was the supreme authority in the Society and that the Executive had acted unconstitutionally in taking a vote of the membership. By this date, it was obvious that the Executive Council had no intention of resigning to allow a new election, nor, apparently, were they making preparations for the election of an Independent Chairman, and therefore the delegates appointed a Provisional Executive Council consisting of four Trustees and four London members to take over in January.

The inevitable followed. The Executive Council locked themselves in with provisions at the new head office in Peckham Road, London, and refused admission to the Provisional Executive. The wall of an adjoining house was broken through and after an undignified skirmish the Executive Council were ejected into the street. The old Executive Council took legal proceedings against the Provisional Executive but lost their case, and after six months in office, during which, although working at the trade by day they had kept the affairs of the Society in order, the latter gave way to the newly elected Executive Council with J. T. Brownlie as the first Independent Chairman. In 1914 the Final Appeal Court passed judgment upholding the old Executive Council, though specifically stating that the newly elected Executive was to remain in office, and authorised the payment to the old Executive Council men of wages due to the end of their technical term of office. Not a pleasant story and one reflecting little credit on all concerned, but publicity on the internal affairs of the Society did not stop there. Jenkin Jones, who had been elected as General Secretary on the resignation of George Barnes, stood again for office in 1913 with Robert Young, then Assistant General Secretary, as his opponent. Young, in letters and in his election address, described Jones as unfit on the grounds of inefficiency to hold office, and set forth a series of charges against him illustrating his inability to act as General Secretary.

Jenkin Jones was defeated for General Secretary and then sued Robert Young for libel based on his letters to members during the election. Once again the workings of the A.S.E. were discussed at length in the courts by lawyers and judges, who cared little for the effects of such publicity. Jones won his case and the Executive dismissed Robert Young, but the Final Appeal Committee upheld Young by deciding that the result of a libel suit had no bearing on his fitness to retain the office to which he had been elected by the membership.

The revolution in the leadership of the Society had taken place and was followed by the votes to terminate the Terms of Agreement and the Carlisle Agreement on the Premium Bonus system. But whether this was to be merely a " palace revolution "—a change of individuals and the wording of agreements—or a change in organisation and policy, the following years were to show.

Overseas Branches

One further field in which the Executive came into conflict with the membership was its relations with the American and Canadian branches. The increase in the number of members overseas from 5,000 in 1891 to 32,000 in 1920 and the development of problems peculiar to those countries raised the issue of local autonomy and centralised control. On the one hand it was necessary to ensure that the benefits, voting, contributions and entry to the Society overseas should strictly conform to the practice in Britain in order that members transferring overseas should not suffer any loss of rights. On the other hand overseas members had their own battles to fight and particular conditions to face and claimed a fair degree of local control and flexibility, though remaining a part of the Society and able to draw on centralised funds.

In Australia, New Zealand and South Africa this difficulty was, by and large, overcome by the establishment of the Australasian Council and later, in 1906, the South African Council, each with full-time Secretaries and Organisers. The problems facing the Councils and members in these countries while different from those in Britain were not fundamentally so. The A.S.E. branches were the only effective trade union organisation catering for skilled engineers in these countries, the methods of and entry to the trade were similar to those in Britain and many of the leading officials had been trained in British branches of the Society. While there were complaints from time to time that " the South African engineer is not interested in a Benefit Society," or that Australian appeals to the Final Appeal Court were not fully understood in Britain, the growth of the Society in these countries indicated that the general policy was correct.

In the United States of America and Canada, however, the picture in these years was one of stagnation. While the A.S.E. in 1914 in America could claim to be the oldest existing union for engineering workers on that continent, it could not answer the charges by American unions that it had failed to grow in the previous thirty years and had failed to attract American workers. The difference in background between the American and British engineers was great and increased as time went by. Entry to the trade did not depend on apprenticeship ; machinists and handymen were far more common. In a young and expanding country there was little demand for liberal superannuation and donation benefits. Further, the A.S.E. was never popular as a " British " institution and rival unions did not hesitate to draw attention to the control from London. Lastly, whilst it was the oldest union, at no time was it the strongest and it was never in a position to assert and prove, as was possible in the Dominions, that the principles upon which it was run were superior to those of other unions.

In this background two policies were possible. One was to wholeheartedly adapt the A.S.E. in America to American conditions by granting virtual autonomy to the branches : the second was to keep strict control over the branches and view them mainly as a stepping-stone for British members on travel. A number of the members in America advocated the first policy ; the Executive Council in London favoured the second.

The dynamic Isaac Cowen, the American Organiser, was in the forefront of the battle which followed. Believing deeply in the principles of the A.S.E. he waged a David and Goliath battle against the

International Association of Machinists, the Patternmakers League and the Brotherhood of Blacksmiths, American sectional unions which tried to run the " British " A.S.E. out of the shops. This battle ended with " His Excellency " Samuel Gompers—as Cowen called him—of the American Federation of Labour revoking the charter of the A.S.E. in America and was followed by a decision of the members to join the International Workers of the World in 1905. This body, which was both industrial and political, had been formed in part by the American Labour Union in which Cowen played a prominent part. The Executive Council in London quickly vetoed this decision and it took all the diplomacy of George Barnes to regain the charter from the A.F. of L.

At the same time Cowen led the American members in a demand for " National Autonomy and International Affiliation " for the American branches. If this were agreed, claimed Cowen, the American branches could lower contributions and benefits, open the ranks to all engineers and sweep the sectional unions out of existence. But such a step was too revolutionary. After a long campaign the American branches were allowed in 1900 to print their contribution cards in American currency instead of £.s.d., which they had been made by rule to use since 1861, but this was the only concession. While Cowen could thunder that the " Executive Council cannot run affairs in this country without ruining them "[30] and " after sixty years the sum total of all the efforts embodied in our Rule Book has only succeeded in what I might describe as embalming the A.S.E. on the North American Continent. The rules make us appear lifelike yet render us lifeless . . ." the Executive could point to heavy outlay on organising with very little result. The reply " It is not a wonder we do not advance ; it's a miracle we exist at all " was true enough but no inducement to the Executive or the Delegate Meetings to try unchartered paths. The final curtain came down on the American branches in 1920 when agreement was reached with the International Association of Machinists to recognise the A.S.E. card and accept the transfer of such members as so wished, and Isaac Cowen was presented with a gold watch by the Executive and the Delegates as a tribute to his tremendous efforts to build the Society in America in the previous thirty years.

CHAPTER VIII

Engineers in the First World War and the Second Amalgamation: 1914–1920

The outbreak of war in August, 1914, found the Society recovering from the strain of the internal conflict of the two previous years. The membership was rising fast and anticipating big advances but the Society was not yet out of the wood. While steps had been taken to break down the old policy and methods, there was not yet full agreement on a new policy and organisation which would re-instil confidence and unity. Before this could be accomplished the war intervened to upset the best laid plans of mice and men. The rich harvest envisaged by many as the result of the sweeping away of the old leadership and repudiation of the Terms of Agreement and the Premium Bonus Agreement, could not be reaped. The hopes for the eight-hour day were postponed. The gulf between the leadership and the rank and file, which was showing every sign of being successfully bridged, was in fact widened. The internal struggles in the Society, which had shown signs of ending, started once again, and assumed a character and extent hitherto unknown.

Many of the problems which confronted the Society, for example, new entrants, piece-work, manning of machines, and shop discipline, were, during the war, merely intensified versions of those with which it had been faced in the pre-war development of the industry, and with the end of the war reverted to their peace-time tempo. But others were new and unprecedented.

For the duration of the war the solution of these problems had to be sought not only in the sphere of industrial policy and bargaining with the employers but also in the realms of political policy and relations with the Government. The demands with which the Government approached the engineers were sweeping. The war was an engineers' war. To wage it successfully the output of munitions had to be vastly increased. This involved a great extension of the numbers employed in the engineering industry, the use of many new machines and processes, the introduction of payment by results on a large scale, and a continuity of production undisturbed by strikes or lock-outs. At the same time, the Government desired to be in a position, when necessary, to recruit men for the army from the industry and, since it had to be on its guard against inflation, was also interested in the level of wages. In order to meet its requirements the Government adopted a policy of taking the leadership of the engineering unions into its confidence. But this was not always sufficient and at times the Government made direct approaches to the rank and file, sometimes to coerce and threaten, and sometimes to persuade and convince.

Such demands, if they were to be conceded, involved the sacrifice of customs and practices which preceding generations of skilled engineers had built up as safeguards. There were a few in the ranks of the Society who were unwilling to surrender any of their hard-won rights because they opposed the whole character of the war. The majority supported the war and were prepared to co-operate in its successful prosecution provided they considered the demands made upon them were really justified and not open to abuse by the employers.

The Executive saw written agreements and the closest consultations with Government Departments as the best means of reconciling the demands for increased munitions with the demand for adequate safeguards for the membership. But not all the rank and file of the engineering unions were content with mere paper pledges. At any suggestion that the concessions made were being abused by the employers or the Government itself they showed their determination to assert their position by the use of the strike weapon. It was inevitable that every sacrifice demanded by the Government or any incident in the industry which seemed to infringe the safeguards promised, should lead to a conflict between the leadership of the unions who had voluntarily given up the right to strike, and sections of the rank and file who felt themselves bound by no such pledge. This gave to the successive waves of unrest among the engineers during the war the character of revolt against their own established leadership as well as against the Government or employers, and was also partly responsible for the development of the shop stewards and the unofficial movement built up by them as an alternative to the Society's leadership.

The " Treasury Agreement " and the Trouble on the Clyde

During the first year of war the Government sought to obtain its requirements from the industry through voluntary concessions from the unions, and on paper they met with a large measure of success. In August, 1914, the unions agreed to suspend the negotiations which were then proceeding with the Employers Federation for a 48-hour week. In the same month the A.S.E. instructed their members in the railway shops to withdraw the strike notices which had been tendered in July in support of the projected strike of railwaymen. In November they agreed at the Central Conference to the introduction of women on automatic machinery at Armstrongs, Elswick. In December the Employers' Federation asked that trade restrictions in the shells and fuses section of the industry should be removed to allow the wide recruitment of additional labour. After several discussions with the employers and the Government, in which the urgency of these munitions was stressed, the Executive of the Society in March, 1915, signed and secured endorsement by the members of the Shells and Fuses Agreement, which permitted the employment of women and semi-skilled men in factories engaged on this work.

These concessions were by no means sufficient to meet the Government's demand for engineering labour. The next step was taken by Lloyd George, then Chancellor of the Exchequer, who invited the trade union leaders to meet him at the Treasury on March 17. At this Conference a National Advisory Committee on Output, consisting of trade union leaders chaired by Arthur Henderson and including J. T. Brownlie was set up, and its recommendations were accepted without qualification by the majority of the unions represented. The A.S.E. delegates, however, refused to endorse the proposals until the Executive had discussed them. It was not until they had met Lloyd George again on March 25 and obtained certain assurances from him, that they signed the " Treasury Agreement." By this Agreement the unions gave up their right to strike, agreed to relax all customs which restricted the output of munitions, and permitted dilution on government work. As safeguards the promise was obtained that these measures would be operated solely in firms on war work, that they were to be only for the duration of the war, that dilutees would get the rate for the job, and that the profits of firms on such work would be limited. These concessions by the Government were regarded as fairly satisfactory and after several meetings throughout the country at which the Agreement was explained, the members voted in its favour by a four-to-one majority. Apart from some grumbling by the older craftsmen, who viewed dilution as the beginning of the end, and opposition from the more militant members on the surrender of the strike weapon, the Government could record a fair degree of success in its first demands upon the engineers.

The strike on the Clyde in February, 1915, while the union leaders were engaged in conference with the Government and employers, was only indirectly connected with the demands for relaxation of peacetime rights and customs. In December, 1914, the three-year wage agreement with the Clyde Employers' Association had terminated and the unions had submitted a demand for a twopence an hour (or three shillings a week) increase. The employers, on the grounds that the demand was outrageous, delayed the local conference on the claim until January 19 when their counter offer of a half-penny was indignantly turned down. Central Conference was fixed for February 12 but the local shop stewards, after a meeting on January 26 placed a ban on overtime. On February 12 the representatives of the unions agreed to recommend the acceptance of three farthings an hour increase. But before a ballot on the offer could be taken the storm broke ; on February 16, 2,000 men at G. & J. Weir's left work. The fact that the firm was paying American workmen the higher wages refused to the men proved to be the last straw. The strike spread rapidly and eventually involved 9,000 men in the eight most important firms on the Clyde. While the Government thundered and threatened, the Executive cajoled. The men were not prepared to be intimidated into accepting further delay, for while wages were stationary, the cost of living was rising rapidly. Since the outbreak of war the price of flour had risen from tenpence to one shilling and threepence per half-stone, sugar from twopence to threepence half-penny per lb. and tea from one shilling and twopence to one shilling and eightpence. Fish had doubled in price and many items of the normal diet of the Clyde workmen were only obtainable at fancy prices. Coal merchants were demanding sixpence more for every sack, and landlords were taking advantage of the influx of new labour into the area and charging exorbitant rents for the worst housing conditions in the British Isles. The Clyde men could see Government contractors enriching themselves at the expense of the nation, and even Bonar Law was moved to remark in the House of Commons that " ships to-day are making simply enormous profits and those profits come from the very cause for which the people of this country are making sacrifices in every direction and even giving their lives."[1]

As a consequence of the high feeling, the Executive brought forward the date of the ballot to February 24 and, as was to be expected, it resulted in the overwhelming defeat of the three-farthing offer. Two days later the Government issued an ultimatum demanding a return to work by March 1. Still maintaining their defiance but yielding to *force majeure* in the form of a combined Government, trade union and public onslaught, the men returned to work on March 4. Further meetings with the employers failed to elicit any more concessions, and on March 8 the dispute was referred to the newly formed arbitration court, the Committee on Production. The men agreed to accept the Committee's award, and on March 22, were given one penny an hour in the form of a war bonus, the semi-skilled getting three-farthings and piece-workers an increase of 10 per cent.

Although the dispute was confined to the Clyde its repercussions were felt throughout the country. The leading spirits behind the strike had been the shop stewards of the various factories. Meeting together in January it was they who had imposed the embargo on overtime, and when the strike started in February they formed themselves into the Central Labour Withholding Committee responsible for the leadership and conduct of the strike. At the conclusion of the strike it was renamed the Clyde Workers Committee and remained in existence throughout the war, serving as the model upon which unofficial bodies in other important cities representative of the shop stewards of all engineering unions were based.

Protests Against the Munitions Act

The voluntary Treasury Agreement was not proving very effective and by the middle of 1915 the Government had to take further measures. A Ministry of Munitions was established with Lloyd George at its head, and the Munitions of War Act rushed through Parliament after token consultation with the union leaders, whose opposition to compulsory action was summarily over-ridden. This Act gave legal force to the Treasury Agreement and set up special Munitions Tribunals in the localities to enforce its terms, and in an effort to control the available supply of labour a clause in the Act forbade workers from leaving their munitions jobs without a leaving certificate from the employer.

The Executive reluctantly recognising that some measure of compulsion was imperative to secure production on the necessary scale was nevertheless extremely dissatisfied with the safeguards provided by the Act, and knowing that appeals to the membership to exercise restraint would be useless unless the Government were persuaded to adopt some concessions, entered into further negotiations. In October, 1915, as a condition of their co-operation in persuading the men to accept widespread dilution, they were able to secure a guaranteed minimum wage of twenty shillings for women workers, and in January, 1916, the Government was induced to amend the Munitions Act along lines proposed by the Society's leaders. The amending Act gave the Government power to give directions to firms on munitions work with reference to the wages of semi-skilled and unskilled workers, provided the legal means for enforcing a restoration of suspended practices at the end of the war, and obliged the employers to consult the workers concerned before any changes in workshop conditions were made and to record them in order that they could be restored to normal after the war. The Act also introduced a Munitions levy on profits made by Government contractors, but these restrictions still allowed the employers to make a clear 20 per cent. over pre-war profits and left in their hands 20 per cent. of profits over and above this figure.

The concessions wrung by the Executive from the Government did little to stifle the growing opposition of the rank and file to the "Slavery " Act as it was called, and it was the Clyde again, the stronghold of the shop stewards' movement and of the revolutionary socialists, where it was estimated between 85 and 90 per cent. of the shipbuilding and engineering workers were trade unionists, which became the centre of revolt.

The Clyde was angry with several aspects of the Government's policy. The main complaint was the one-sidedness of the legislation. Section VII of the Munitions Act was seen as a particularly glaring example, for, under it, managements could dismiss a worker and blacken his character on the leaving certificate but the worker himself could not leave without permission. The dismissal of two shipwrights at Fairfields shipyard in August, 1915, and the insertion of the words " for slacking " on their leaving certificates nearly brought the whole of the Clyde on the streets again. They were only held back because union officials paid the fines which had been inflicted on the stewards who had led out the yard in protest. Opposition to the dilution clause was of a slightly different character. It was not opposed as such. " We regard it as progressive from the point of view that it simplified the labour process " wrote *The Worker*, organ of the Clyde Workers' Committee, " makes labour more mobile and tends to increase output. In short, it is a step in the direct line of industrial evolution."[2] But, the Clyde workers claimed, " this scheme of dilution must be carried out under the control of the workers . . . unless this demand was granted, they would fight the scheme to the death."[3] The Government refused and the fight was on.

The third factor causing unrest were the doubts in the minds of the workers about the post-war position. While the Executive and the Government could point to pledges by employers and legislation, the Scottish *Forward* was telling workers what the employers were saying among themselves:

> "In regard to our workers, whatever the unions may do and notwithstanding any paper pledges given, employment can and never will be the same again. . . . It is only by means of this freedom to hire cheaper labour that our manufacturers can hope, either to capture or keep some of the German markets."

Twice this was reprinted from the Scottish *Law Courts Record* to remind the engineers of the true aims of the employers.[4]

Lastly, the inaction of the Government in face of the profiteering and racketeering that was taking place on all sides contrasted strongly with the almost monthly demands for new concessions from the workers. The attempt by the landlords or "factors" in Glasgow and on the Clyde to increase rents came to a head in November, 1915. Eighteen munitions workers were summoned before the Debt Court for non-payment of the increased rent demanded. In support of these workers, and of the soldiers' wives and Belgian refugees who were being forced to pay higher rents, nearly 10,000 engineers and shipbuilders downed tools and along with numbers of housewives marched to the Court in protest and wired the Government that unless action was taken the strike would continue. The cases were dismissed and within a week the Government had rushed the Rent Restriction Act through Parliament.

In an attempt to end the tension in Scotland and to ensure that the proposed dilution measures went through smoothly, Lloyd George himself decided to visit Glasgow. The shop stewards demanded that he should meet them and the rank-and-file engineers and at the City Hall, Glasgow, on Christmas Day, 1915, there occurred one of the most dramatic meetings of the war. Arthur Henderson was Chairman and under a running fire of interruptions he tried to introduce the Minister of Munitions. When Lloyd George, the "best paid Munitions worker in Britain"[5]—he was getting nearly £100 a week—got up to speak he was greeted with booing and cheering and two verses of the "Red Flag" were sung before he could utter a word. When he did start every other sentence was made inaudible and each point was capped by another from the floor. For example, when he was stressing the need for dilution he said:

> "We need a very large number of heavy guns and projectiles, and I am going to put to you a business proposition. [For the exploiters]. Do you think these men in the trenches are exploiters? [Don't hedge.] [The shipowners are doing their bit.] Do let me state the facts. [We know them.] . . . What steps have we taken? We have started great National factories; State-owned and State controlled. . . . My friends, these are great Socialist factories. [Violent interruption]"[6]

David Kirkwood, convener at Beardmore's Parkhead Forge, had to appeal for order to let the Minister finish, and at the end of the speech, after answering some written questions, Arthur Henderson announced that Lloyd George had to leave. This was too much for John Muir of the Clyde Workers' Committee, who wanted the Minister to hear their side as well. He stood up and attempted to speak, but neither Muir, Lloyd George nor Henderson could make themselves heard and the meeting broke up in disorder. The Clyde engineers had left Lloyd George in little doubt as to their deep-seated opposition to the methods of the Government.

The national and the local press were instructed to report the speech as if there had been no interruptions, but the Glasgow *Forward* on January 1, 1916, printed a true report of the meeting. Immediately the Government instructed the Glasgow police to seize all copies and suppress the paper under the Defence of the Realm Act. When the news became known on the Clyde indignation knew no bounds, and a further strike was narrowly averted by the Government beating a retreat and allowing the paper to reappear.

The lull in the storm was brief. On January 20 the Committee on Production refused the Clyde demand for a twopence an hour increase. On February 1 John McLean, the revolutionary schoolteacher, who exerted a strong influence among the stewards on the Clyde and at whose classes it could be said " there was hardly a prominent member of the A.S.E. who had not attended "[7] was arrested and later sentenced to three years' imprisonment for sedition. On February 7 the *Worker* was suppressed after its fourth issue and John Muir, the editor, William Gallacher, Chairman of the Clyde Workers' Committee, and Walter Bell the printer were arrested. On this news strikes broke out in a number of factories and only after the accused were let out on bail did the men go back. But at the subsequent trial the verdict was guilty, Muir and Gallacher being sentenced to twelve months' imprisonment and the printer to three.

On March 17 the Clyde was ablaze again. Following the refusal of the management at Beardmore's to allow Kirkwood to visit sections of the plant other than his own, a thousand men in the Howitzer shop stopped work. In ten days most of the union men throughout the Clyde joined the strike of which the Clyde Workers' Committee again took charge.

The Society's Executive Council immediately repudiated the strikers and attempted without success to get them back to work. The Government waited a week and then launched their attack. On the night of March 24–25 eight of the leaders of the Clyde Workers' Committee were arrested in their beds and deported to Edinburgh.

This final action left the Clyde engineers angry and provoked but leaderless, and after assurances from the Government that there would be no further deportations, and from the Executive of the Society that they would press for the return of the deported men, the Clyde went back to work. Agitation for the return of the deportees was unsuccessful and with the exception of Kirkwood they all had to accept jobs elsewhere. Kirkwood was elected as a delegate from the A.S.E. to the Manchester conference of the Labour Party in January, 1917, and dramatically announced his intention of returning after the Conference to Glasgow. He did, was deported again, but finally on May 30, 1917, after fourteen months' agitation, the order was rescinded.

The Government's policy of ruthlessly beheading the stewards' movement temporarily succeeded in quelling the revolt on the Clyde and until the end of the war, when Scotland again began to take the lead in rank-and-file struggles the centre of resistance to Government policy shifted south of the border.

Dilution, the Call-up and Wages

Meanwhile the Industrial Commissioners, appointed in January, 1916, were at last making some headway with dilution in controlled establishments. They were successful in areas such as Barrow and the Clyde and they carried out the pledge to consult the men and in most large firms dilution committees, on which shop stewards sat, were in operation. The Government was now concerned with man-power for the Armed Forces and, in order to obtain more men, a series of measures were designed between November, 1916, and May, 1917. The most important of these were to alter the basis of exemption from military service, to extend dilution to private work, and to introduce payment by results on a wide scale. The Government realised that the bald introduction of these measures would cause opposition among the engineers and might defeat their object, but it was hoped that the inclusion of George Barnes in the Government as Minister of Pensions in December, 1916, along with other Labour members, and the greater willingness of the Committee on Production from July 1916 onwards to grant wage increases would help to soften the blow.

The Executive of the Society spurred by the feelings of the rank and file was inclined to stiffen its resistance to the demands, and the rank and file, now being increasingly led by shop stewards whose importance and functions had been considerably widened by the operation of war-time measures such as dilution and extended piece-work, were thoroughly on the alert. Suspicion of the policies of the Government and the employers had not been lessened by the events on the Clyde and, more important, an organisation was developing which could lead the opposition.

In the autumn of 1916, feeling was running high over the mounting number of instances where recruiting officers were forcibly enrolling skilled men in the army, despite the Government's pledge that men who volunteered for munitions work and received badges to show they had done so, would not be called up. The call-up of Leonard Hargreaves, a skilled fitter employed at Vickers, Brightside, Sheffield, in November, 1916, while dilutees remained in the works, brought matters to a head. The Shop Stewards' Committee of Sheffield demanded that he be released in line with Government assurances, and a mass meeting held under its auspices on November 13 threatened to strike unless its demands were complied with. On the 15th, Hargreaves was released from the army, and the Government agreed to meet the Society to devise a scheme which would meet their objections. This news did not reach the Sheffield workers and on November 16 they struck work as planned, and two days later workers from Barrow-in-Furness came out in sympathy. Work was resumed only when Hargreaves appeared on the platform at a mass meeting of the men and confirmed that he had been released unconditionally. The Executive meanwhile had signed an agreement with the Government. Every skilled man who volunteered for munitions work was to be issued with a Trade Card by his trade union, which was to serve as a certificate of exemption from call-up. The Government was to obtain the skilled men it required for the various mechanical corps from other ranks of the army and navy, and would only call on the unions to provide additional men when this process was completed.

In February, 1917, an attempt was made to overcome the difficulties and delays which were arising over the large number of wage claims being made by the various districts. An agreement was reached that all district wage claims should be suspended and that national wage demands could be placed before the Committee on Production at four-monthly intervals. At the first of these hearings the Executive submitted a claim for a 10s. rise with 25 per cent. increase on piece-work prices, the rise to be back-dated to January 1, 1917, in the case of those districts which had already made local claims and which were still undecided. The award announced on February 27 gave only 5s. as a war bonus and in those districts which had not received as much as 2s. increase during the war, an additional rise was given to bring the total to 7s. No provision was made to give back payments to those districts which had claims pending.

The Executive welcomed the award, pointing out that it affected over a million workers and involved a sum of £12,000,000 and was " a further testimony to the power and efficacy of the Society."[8] The same view was not taken by many of the districts where wage claims had been submitted earlier and in the Tyne district the men struck for the retrospective payment of a 2s. bonus in addition to the 5s. award. The Executive got the men back to work by promising them that the Committee on Production would consider their claim and the strike had its effect, for the 2s. bonus was made payable from February 1. In Liverpool a strike for a 4s. increase from January 19 was narrowly averted by the Committee agreeing to the demand.

A few days later a serious strike occurred in Barrow over the cutting of the premium bonuses without consulting the men. Only after the Executive had been able to secure an agreement with the employers and the Ministry of Labour that piece-work prices would not be cut unless there was a basic change in the methods of work did the men return to work.

The Shop Stewards' and Workers' Committees in the Strikes of May, 1917

The Government's decision in April to extend dilution to private work and to withdraw the Trade Card Scheme, which the unions had barely had time to introduce with the expenditure of much energy and money, brought protests from the Executive and led to drastic action by the rank and file. The Executive claimed that the previous agreement had been broken without consulting them and refused to give support to the alternative scheme of a Schedule of Reserved Occupations, or to the introduction of dilution on private work unless the Government negotiated with them and agreed to certain concessions.

The wholesale revolt against the new proposals started when Tweedale and Smalley of Castleton, Rochdale, having completed a shell contract at the end of February, 1917, brazenly flouted the existing Act by putting women on grinding machines to grind cotton-spindles and dismissed the men who refused to instruct them. Four hundred union men left work in protest, claiming that the firm had extended dilution to private work without agreement and demanding that the Government prosecute the firm, the O.D.D. Joseph Binns remarking " that if the workmen adopt similar action to what this firm is allowed to do, we would be threatened with martial law inside three days."[9] Despite Binns' warning that unless the firm was prosecuted immediately, all Lancashire would be ablaze the Government took no immediate action. It was only after a mass meeting of Rochdale unionists had decided to down tools unless the matter was taken up, that the Government wired Binns asking him to make out a case against the firm for prosecution. But by that time Binns could no longer control the position and on April 30 wired back " Your wire is useless. Lancashire determined to have matter settled. Cannot control position. Too long delayed."

On May 3, the Rochdale men left work and by May 5, 60,000 were idle in Lancashire. The following day was a Sunday and in all the engineering centres great meetings were held at which the Shop Stewards' Committees called for the extension of the strike. At many of these meetings officials of the A.S.E. attempted to stem the tide and to explain the safeguards which they were in process of extracting from the Government. But feeling was running too high. The rank and file felt that consultation could not secure their rights and that only drastic action would meet the case. On May 7, 10,000 Sheffield engineers left work ; on the next day 5,000 at Rotherham and 30,000 at Coventry were out, and by the end of the week the strike was general in the London district. Derby, Bristol, Bedford, Peterborough, Southampton, Nottingham, Leeds, Ipswich, Crewe joined in and the only two important engineering centres where the men remained at work were the one-time storm centre, the Clyde, and the Tyne. This was principally due to the lenient treatment of the men on many issues in the shipyards and marine engineering centres because of the high priority of the work in face of the U-boat menace.

In every district the leadership of the strike was in the hands of the shop stewards' committees. Despite the difficulties involved in co-ordinating the local movements when post and telegraph facilities were not to be trusted, the shop stewards with the help of bicycles and motor bikes were able to cover the country and call a meeting of representatives from the different localities which was held in Derby on May 12. This meeting decided to summon a conference of strike leaders in London on May 15 to prepare its demands and negotiate with the Government.

Dr. Addison, who had succeeded Lloyd George as the Minister of Munitions, refused to negotiate with the strikers. A deputation from the Conference therefore went to the A.S.E. Executive asking them to arrange an interview for them with Addison. The Executive refused to allow the " unofficial Conference " to " take part in negotiations and conclude an agreement upon a question which affects the whole Society."[10]

In the meantime, the Government adopted the tactics first used on the Clyde and on May 18 arrested eight of the leading shop stewards and issued warrants for the arrest of two others. The Executive, thoroughly alarmed at the effect such an action would have, agreed to arrange an interview for the shop stewards with Addison. As a result of the meeting, the Government promised that there would be no victimisation, and that the arrested men would be released on promise of good behaviour pending their trial, provided the shop stewards would urge the men to return to work at once and allow the Executive to continue its negotiations with the Government.

To all intents and purposes it appeared that the strike had failed in its object. The men were forced to return with nothing further than Government assurances, and the old method of dealing with grievances through the consultations between union officials and the Government had once more triumphed. But in fact the strike achieved a great deal. It succeeded in severely shaking the Government and in making it much more amenable to pressure. On May 23 the charges against the eight arrested leaders were dropped. The Dilution Bill, which had been introduced into the House in April, was withdrawn and discussions on it once more opened with the A.S.E. Executive, and although the Government refused to withdraw the clause extending dilution to private work, the union leaders were able to induce it to accept some important amendments and to hold the Bill up until its terms had been considered and voted upon by the Society's membership. The Executive, congratulating themselves on the concessions they had gained, appealed to the Society to accept the Bill. The men were by no means satisfied and still in fighting spirit the amended terms were rejected by 46,851 to 8,945.

The news of the rejection coincided with Addison's appointment to the Ministry of Reconstruction and his replacement by Winston Churchill at the Ministry of Munitions. Churchill, seriously disturbed by the industrial unrest, was not prepared to take the same risks as his predecessor, and when he introduced the Munitions Bill 1917, in August, the extension of dilution to private work had been quietly dropped. Nor was this the only concession won. The leaving certificate—perhaps the most hated section of the 1915 Act—was withdrawn in October, leaving the men free to change their employment at will. In addition national wage advances were to apply to non-Federated as well as Federated firms. Employers were required to give twenty one days' notice of dilution and to produce a certificate from the Ministry of Munitions to prove that it was necessary. It became an offence to victimise trade unionists following a strike and more stringent provisions were made for enforcing the restoration of pre-war trade union rights and customs. In short, the Government which had started 1917 with the aim of gaining further concessions from the engineers found that as a result of the mass movement it had itself been forced to give ground.

The concessions granted by the Government in the Munitions Act of 1917 and the further awards of 3s. in July and 5s. in October, together with a 12½ per cent. bonus on earnings to skilled time-workers, granted as a result of a strike of iron moulders who found themselves in the anomalous position of earning less than the semi-skilled piece-worker, did not lessen the unrest among the engineers. The fourth year of war found the workers less prepared than ever to make any further concessions to the Government. Contributory causes of the dissatisfaction were the strain of long hours, the rise in the cost of living which had increased by over 100 per cent. since 1914 while wages had risen by only 60 per cent. and the fact that labourers and other time-workers had not received the 12½ per cent. award. Added to these economic factors, opposition to the war became more pronounced, and the success of the Russian Revolution and the peace negotiations undertaken by the Bolshevik Government served to give political emphasis to the industrial struggles of the engineers. At rank-and-file meetings, the demands for an end to further concessions became linked more and more closely with demands for the ending of the war and a "peace by negotiation," and many resolutions were passed calling for the projected Stockholm International Labour Conference to be extended to representatives of the Labour Movement in enemy as well as allied countries.

Recognition of Shop Stewards and Growing Opposition to Government Demands

The events of 1917 had served to strengthen the unofficial shop-stewards' movement, and its leadership of the rank and file. In June, 1917, as a direct outcome of the May strikes a National Administrative Council of Shop Stewards was formed, which attempted to co-ordinate the work of the districts. But while the stewards had been playing a decisive part in the negotiations with the employers there was, as yet, no official recognition of their authority. The issue was brought to a head in November, 1917, when the firm of White and Poppé's of Coventry refused to recognise the right of shop stewards to negotiate with them in the dispute with their toolmakers. The engineering Joint Committee in that town which led one of the strongest shop-stewards' movements in the country and itself issued cards to all Coventry stewards irrespective of union, took up the demand and on November 27 brought out 50,000 workers. They resumed work on December 4 after they had received a pledge that the recognition of shop stewards would be the subject of negotiation between the unions, the employers and the Government. On December 20 an agreement was signed between the employers and the engineering unions which gave the stewards the right to negotiate with the managements on issues affecting the men they represented. The A.S.E., however, refused to sign the agreement, since they considered that the degree of recognition granted was inadequate and it was not until 1919 that agreement was reached with the employers regarding A.S.E. shop stewards, although in practice there were few employers who failed to negotiate with stewards after the Coventry strike.

At the same time there was considerable agitation and a number of strikes for the extension of the 12½ per cent. award to all sections of the workers in the industry, and in December the unrest forced the Committee on Production to extend the bonus to all time-workers, skilled and unskilled, and in January, 1918, piece-workers were granted a 7½ per cent. bonus on earnings.

But it was the Government's announcement to a Conference of trade union leaders on January 3, 1918, that it intended to withdraw the Schedule of Reserved Occupations drawn up with the A.S.E. in May, 1917, and call up skilled engineers between the ages of 18 and 25 which provoked the most widespread hostility. The Executive, angry at the " scrapping of the May, 1917, Agreement without consulting those responsible for that agreement",[11] refused to discuss the man-power proposals unless the Government agreed to negotiate with them separately. The other engineering unions agreed to the proposals and sponsored a number of meetings in the main engineering centres, where Sir Auckland Geddes explained the new Man-Power Bill for the Government. The Society's O.D.D. for the Clyde reported that Geddes had a noisy meeting in Glasgow at which the stewards took complete control, and the O.D.D. for Liverpool stated " I do not suppose he was ever spoken to so plainly at any part of his life. It will help to broaden his education."[12] The Executive agreed to put the proposals to a ballot vote of its members, and, as they had expected, it resulted in them being turned down by the decisive majority of 120,675 to 27,416. At the same time, the National Administrative Council of the Shop Stewards held two conferences in Manchester on the 14th and 21st of March and decided to call for a nation-wide strike against the Bill.

Before action could be taken the March offensive of the German Army on the Western Front began. The Government consented to negotiate with the A.S.E. Executive alone, and the latter, appealing to the engineers to rally at a time of national danger, were able to secure acceptance of the Bill in only a slightly modified form by the slender majority of 58,650 to 46,332.

The lull was only temporary. As soon as the danger was passed the shop stewards' movement again stiffened its demands and opposition to the war, with demands for immediate peace negotiations again becoming a feature of their meetings. In July the instructions which the Government had issued to certain firms limiting their employment of skilled men to a proportion of total workmen—known as the " embargo "—had led to short but almost general strikes in Coventry and Birmingham, and more localised stoppages in different factories were common up to the time of the Armistice. The number of workers in the engineering industry involved in strikes between July and December, 1918, was 65,400, almost double the number involved in the first six months of that year.[13]

The Post-War: Demand for Shorter Hours

The end of the war thus found the militancy of the engineers at a high pitch. The determination which had been used to resist encroachment by the Government and employers found expression in the peace in demands that the pledges given during the war be kept. Two days after the Armistice the Executive of the Society, along with the other engineering unions, met the Government and the Employers' Federation and the Government proclaimed the intention of honouring its pledges by introducing the Restoration of Pre-War Practices Bill. Eight days after the Armistice agreement was reached with the Federation for a reduction of hours, without reduction in wages, to 47 per week to operate from January 1, 1919, if endorsed by the members. This Agreement was hailed as "one of the greatest triumphs of British trade unionism,"[14] as it not only meant a reduction of six or seven hours a week but for the first time established a national standard working week. The Agreement was endorsed by the members with 36,793 in favour and 27,684 against.

The substantial minority against the Agreement were not satisfied with the extent of the reduction. The feeling of this section was aptly summed up in a letter to the *Journal* which pointed to "the immediate necessity of now demanding our place in the sun . . . to-morrow will be too late."[15] Opposition to the acceptance of 47 hours came largely from those districts where the stewards were most strongly entrenched and where the leadership was convinced that demands gained through negotiated agreements were neither as lasting nor as great as those fought for and gained by "direct action."

At the end of January, 1919, without the consent of the Executive but with the support of the District Committee, every shop on the Clyde struck work with the demand for a 40-hour week. They were rapidly followed by the men from Leith and Edinburgh, and at the same time the movement spread to Belfast, where the men struck for a 44-hour week while the London District Committee put in a demand for a 40-hour week.

The strike on the Clyde was one of the most dramatic in the history of the Scottish workers. A conference of shop stewards and District Committeemen from many unions issued a manifesto "To all workers—A Call to Arms," calling for a general stoppage of work on January 27. To the Clyde workers the need for shorter hours was crystal clear. "Thousands of workers are being demobilised from the Army and Navy every day. Over 10,000 workers have been dismissed from civil employment. They are now looking for jobs. There are no jobs for them. There is only one remedy. Reduce the number of hours."[16] The call was answered not only by the engineers, and a large section of industry in Glasgow and the Clyde came to a standstill. The Lord Provost of Glasgow agreed to transmit the men's demand to the Government, and a great demonstration was called for January 31 to receive the Government's reply. While the Strike Committee was attempting to see the Provost inside the City Chambers, the Government's reply was given outside in St. George's Square, where the Glasgow police started batoning the meeting of 50,000 workers. After its initial astonishment the crowd fought back and it was only after the leaders had appealed to them to retire to Glasgow Green that they agreed to disperse, the Riot Act having been read. Ten of the principal figures, including David Kirkwood, Emmanuel Shinwell and William Gallacher, were arrested and that night a warrant was put out for Harry Hopkins the Glasgow District Secretary. The next day the Government brought troops armed with machine guns and tanks to Glasgow and placed the City under martial law. The Executive of the Society added their weight to the side of law and order and suspended the Glasgow, Belfast and London District Committees. These actions effectively prevented the movement from spreading and after two weeks the strike was broken and the men went back to work on February 11. The employers adopted savage reprisals and many stewards found it impossible to find a job. Two of the leaders were sentenced to terms of imprisonment and Harry Hopkins was ordered to leave the District Office.

Although the strikes failed in their immediate object they succeeded in inducing the Executive of the Society and other engineering unions to re-open the fight for the 44-hour week. Another ballot was taken in May, 1919, and resulted in 64,903 in favour of demanding the further reduction of hours with only 2,599 against. The Employers' Federation refused to accede to the demand or to continue the negotiations on the anomalies of the 47-hour week, such as piece-work prices, unless the demand was withdrawn. Finally, the question was shelved as the unions agreed to the setting up of a committee of employers and unionists to report on the effects of the 47-hour week on the industry, and discussions on the adjustments necessary under the 47-hour week were resumed.

The most important of these adjustments was in relation to piece-work. Time-workers were safeguarded by the agreement that with the reduction in hours there should be no reduction in wage rates, but if piece-workers were not to suffer some increase in prices was necessary. In April, 1919, agreement was reached between the unions and the Engineering and National Employers' Federation that any prices or times fixed which would not enable a worker of average ability to earn 33⅓ per cent. above time rates should be adjusted upwards. But the agreement went further than providing for adjustment arising from the reduction of hours. It established on a national basis and for the first time the principle that piece-workers were entitled to a definite percentage above time rates, and in addition that prices once fixed could not be altered save when there was a change in the means or method of production. The struggle to control the conditions of piece-work, which had developed when the struggle to abolish piece-work had failed, had taken a big step forward. But the principle of opposition to piece-work had not been conceded. In the following year, when the employers submitted proposals for the general operation of the system of payment by results, the members by a three-to-one majority rejected the idea of even negotiating on the question.

The Effect of the War on the Society

Strikes and conflicts with the Government were the most widely publicised aspects of the Society's history in war-time, but at the close of the war the Society could point to the part its members had played in assisting the great expansion and development of the engineering industry to meet the needs of warfare and to the successful resistance to attempts by the employers and the Government to use " national emergency " as a cover for one-sided legislation and attacks on the rights and conditions of the working class.

The efforts and struggles by the membership to achieve these ends naturally affected the structure and policy of the Society. There were three main currents. In the first place a national policy and approach to all problems finally triumphed over the local and parochial outlook. Secondly, new ideas were developed, chiefly by shop stewards, as to the role and functions of the Society. Thirdly, the war-time experience convinced both the Society and members of other engineering unions that further amalgamation was both possible and necessary.

The emergence of a national policy was the most important development and it influenced the other two currents. The war had placed the engineers in a key position and the negotiations and discussions between the Government and the Executive of the Society emphasised the national character of the problems. The opposition to some of the demands by the Government which was led increasingly by shop stewards was similarly national in character. While some local shop stewards' committees remained local in outlook and policy, the important committees were linked through the National Administrative Council of Stewards and drew their strength from its country-wide character. Similarly in negotiations with the employers, local demands were merged into national demands. National wage demands had taken the place of local demands in 1917 and the practice was continued in the post-war period. The acceptance of this policy was made easier by successful attempts at levelling up the lower paid districts to the rates paid in the best organised districts by special claims to the Committee on Production in 1918 and 1919. The Agreement of 1918 on hours was of a national character in contrast to the previous local agreements and demands for reduction in 1871 and 1897 and the 1919 Agreement on piece-work was similarly national in effect. For good or for ill, the membership realised that on the main issues of wages, working conditions and the rights of the trade unions, purely local struggles were a thing of the past.

The development of a national policy and approach prepared the ground for a solution to the problem of democracy within the Society.

The conflicts in the pre-war period between the Executive and the membership had, for the most part, been occasioned by the conflict between local demands and national policy. No amount of voting or conferences could persuade the districts that they were not right. With the general acceptance of a national outlook, this problem could be solved by the provision of machinery to ensure that the officials were fully in touch with the feeling and opinions of the membership in the workshops. During the war, steps along these lines were taken by the insistance of the Executive, in discussions with the employers and the Government, that before any agreement could be made their members must vote on the issue, and by the summoning of special conferences of Organising District Delegates and representatives of District Committees. Following the Delegate Meeting of 1917 the Executive had the power to call National Conferences, which could take decisions on policy provided that such decisions did not require alteration in the rules.

In more peaceful times these measures might have successfully solved the problem of authority and leadership. But the unrest among the engineers which the war engendered prevented complete solution. Opposition to the policy of the Executive was to a large extent political and arose primarily from the shop stewards, the spokesmen of the members in the workshops, who had an important role to play in the negotiating machinery of the Society. They had been called into existence to redress the balance in favour of the employers resulting from the speed-up in the tempo of workshop life, wide use of systems of payment by results, and dilution. The performance of this role alone would not necessarily have led to a wide gap between them and the officials. But in a situation where there was a difference of opinion between some shop stewards and the officials as to the aims and objects of trade unions, and on the amount of support that should be given to the prosecution of the war, the influence of the shop stewards over the membership in the workshop was sufficiently great to constitute a challenge to the policy and authority of the Executive, a challenge which could not be solved by votes alone.

The idea that the trade unions could, when sufficiently strong and well led, take over the whole industrial system—an idea that had been developed in the strikes and unrest prior to the war—found many supporters among the shop stewards in engineering. Socialism by Parliamentary means seemed impossible, but by direct action it seemed just round the corner. The war put the ideas of socialism in the background for a while, but direct action still appeared the most successful means of achieving immediate demands. When such action was banned by the officials for industrial and political reasons the stewards had a ready answer. " We hold the view," wrote *The Worker*, " that trade union officials are the servants and not the masters of the rank and file."[17] This reversal, by implication, of the accepted meaning of " leadership," and the belief in " direct action " were so widely at variance with the accepted policy and structure of the Society that little compromise was possible. A third element which widened the gap was introduced in the last eighteen months of the war when more and more of the leading shop stewards began to express opposition to the war as such. Criticism of George Barnes, who had entered the War Cabinet in 1917 on Arthur Henderson's resignation, was particularly bitter, and the success of the Russian Revolution in November, 1917, under the slogan of Bread and Peace had a marked effect. Typical of the growing feeling against the war was the resolution passed by a meeting in Manchester in December, 1917, of representatives of shop stewards' and workers' committees which called for an immediate negotiated peace.

Amalgamation: the Formation of the A.E.U.

While these differences of aims between some of the shop stewards and other sections of the membership, particularly the Executive, led to fierce internal discussions, charges and counter-charges, which the normal machinery of voting and conferences did not allay, both schools were agreed on the need for strengthening the Society.

The increase in the membership of the Society from just over 170,000 at the outbreak of war to close on 300,000 at the Armistice was a tribute to the activity and vigilance of the shop stewards, and to their loyalty to the Society however much they criticised their Executive. Similarly it was the enthusiasm of the shop stewards and rank-and-file membership as well as the adroit negotiations of the Executive that assisted the next step towards unity in the ranks of the engineers.

The obstacles in the path of amalgamation were many. Demarcation disputes were no longer the main reason for inter-union hostility. The war-time bone of contention proved to be the claim of the A.S.E. to negotiate with the Government by itself, an attitude which was much resented by the smaller sectional societies. The Society, on the other hand, could claim with justification that its vast membership which more than equalled that of all the other societies put together gave it the right to separate consultation. The results of the war-time joint conferences which were held only tended to confirm their attitude. At these the Society found itself outvoted by the representatives of the smaller societies, who, may it be said, were often prepared to accept the sacrifices demanded by the Government without providing adequate safeguards, mainly because the Government's man-power and dilution proposals did not affect the patternmaker, boilermaker or blacksmith as much as it did the fitter and turner membership of the A.S.E.

Moreover the experience of attempts to forward amalgamation through the Federation of Engineering and Shipbuilding Unions had been very discouraging. In October and November, 1914, the A.S.E. and the Ironfounders had called conferences on amalgamation which were attended by representatives of the Steam Engine Makers, Blacksmiths, Boilermakers, United Machine Workers, Ironmoulders and Patternmakers. Some agreement was reached but it was left for the Federation to take the next steps. After two years' discussion and inaction, the Executive of the Society felt bound to observe that " no scheme handled by the Federation has a chance of success. . . . The spirit of sectionalism is there too strongly entrenched."[18] And with the Federation of little value in negotiation with the Government and of no value in assisting amalgamation, the Society in January, 1918, by a four-to-one majority decided to secede from the Federation as " on its present basis, so far from promoting solidarity, it stands definitely in the way."[19]

Against these rebuffs on a national level stood important advances in the districts. The Amalgamation Committees which had been formed in some centres immediately prior to the war did not stop their activities. In 1915 they had linked together in a National Committee and in the following two years six national conferences of rank-and-file delegates from different engineering unions were held to discuss amalgamation. In 1917 the Amalgamation Committees fused with the National Shop Stewards' Movement, which had learnt from day-to-day experience the value of unity between the unions. These bodies let no incident pass without driving home the need for greater amalgamation. In addition there were the District Joint Engineering Trades Committees, on which served local officials of all the engineering unions. The Coventry Committee, probably the strongest in the country, included representatives from twenty one different unions and the Birmingham Committee thirteen. The experience of these Committees left no doubt as to the advantages of unity.

Following the decision of the Re-called Delegate Meeting in December, 1917, the Executive of the Society drew up a scheme of amalgamation, secured endorsement by the membership and in September, 1918, twenty two Societies in the engineering industry were invited to discuss the proposals. This was the first of a series of conferences which in May, 1919, led to the unanimous agreement by seventeen Societies to submit the amended proposals to a postal ballot of their members. The Boilermakers and Ironfounders were the most important of the societies who did not accept the invitation to assist in drafting proposals.

The next problem was to secure the requisite majority. The law demanded that for the amalgamation of two or more trade societies at least 50 per cent. of the membership must vote, and of these, at least 60 per cent. must be in favour of the proposal. The efforts to secure a large vote were assisted by the successful campaign to elect Tom Mann as General Secretary, in the place of Robert Young, who had resigned in compliance with the rules on his election to Parliament for Newton in the December, 1918, election. Tom Mann had been known for thirty years as a spirited advocate of amalgamation and his eloquence and enthusiasm was added to the efforts of the local amalgamation committees.

When the votes were counted it was found that 56 per cent. of the membership of the A.S.E. had voted, casting 92 per cent. of the votes in favour of amalgamation. Other societies having the requisite percentage of votes and majorities were :

Steam Engine Makers' Society.
United Machine Workers' Association.
United Kingdom Society of Amalgamated Smiths and Strikers.
Associated Brassfounders, Turners, Fitters, Finishers and Coppersmiths' Society.
North of England Brass Turners, Fitters and Finishers' Society.
London United Metal Turners, Fitters and Finishers' Society.

Subsequent voting added three more Societies to the number in favour. These were:

East of Scotland Brassfounders' Society.
Amalgamated Instrument Makers' Society.
Amalgamated Society of General Toolmakers, Engineers and Machinists.

Of the societies which voted and failed to obtain a 50 per cent. poll, the most important were the United Pattern Makers' Association and the Electrical Trades Union.

Representatives of the amalgamating societies elected a Rules Committee which formulated the new rules, appointed the new officers—J. T. Brownlie and Tom Mann of the A.S.E. became President and General Secretary—and decided that the Amalgamated Engineering Union should come into existence on July 1, 1920.

The new constitution resembled that of the A.S.E., and for the most part adopted, with slight modifications, the new rules which had been introduced by the Delegate Meeting of 1919 but never operated pending the amalgamation. The A.E.U. rules made an important attempt to overcome the long-standing problems of the powers to be given the Executive in relation to the powers of the membership. In place of the Delegate Meeting, a National Committee consisting of two representatives from each Divisional Committee—themselves an innovation—was to meet annually to receive a report from the Executive Council and to give guidance as to future policy. Every fourth year the National Committee was empowered to consider suggestions and decide on alterations in the rules.

A National Committee meant that for the first time in an effective fashion there was recognition that it was not practicable to determine the policy of the Union by the alteration of rules alone. Only members working at the trade or signing the vacant-book could be elected to to the National Committee, which ensured close and regular contact between the Executive and leading members of the rank and file, and also, by separating policy-making from rule-making, ensured the necessary flexibility. District Committees combined where necessary to elect representatives to Divisional Committees, forming another link between the Executive and the membership. Other important changes were the increase in the number of Organising District Delegates from thirteen to twenty six and the reduction of the number of Assistant Secretaries, which had grown to six, to two. Shop stewards were recognised as having a direct right to assist in policy-making, instead of being confined—in rule—to "policing" old members and recruiting new ones, by representation on District Committees and through Shop Stewards' Quarterly Meetings to be held in each district. Lastly the Final Appeal Court was to consist of fifteen members elected by the Divisions throughout the country, to meet annually and to decide all cases of appeal against the decisions of the Executive Council from members, branches or District Committees. This body, composed entirely of rank-and-file members, was the highest committee of the Union and the Executive Council was bound to carry out its decisions.

The achievement of this amalgamated union with over 450,000 members and funds amounting to £3,250,000 was the result of much hard and tedious work by both the members and officials. Inevitably there was some dissatisfaction with the result. Some members could with justification say that it was only the smaller societies which had amalgamated, while the powerful boilermakers, foundryworkers, patternmakers and electricians were still outside. Others were disappointed that the scope of the Union remained limited, and that the demand of the Amalgamation Committees for an industrial organisation covering all grades and both sexes of engineering workers, and for friendly benefits to be separated from the general trade-purposes of the Union had not been achieved. One member expressing these views wrote " The A.E.U. is a craft union, and still retains the odious features of craft unionism " and concluded " let us make the best possible use of it but let us at the same time be under no delusion as to its power and potentialities."[20]

Despite its limitations the keynote of the amalgamation was a new militancy and sense of power, reflected in the suggestion of one writer that the motto of the A.E.U. should be " Defiance not Defence " in place of the old A.S.E. motto of " Defence not Defiance." Members of all the amalgamating societies looked back with pride on their history of struggles to improve the conditions of the engineers and with Tom Mann hailed the advent of the A.E.U. as a further step in the unification of the engineers first begun by Allan and Newton in 1851 :

> " May it ever be found ready and capable of defending the interests of all it becomes responsible for, and also prove to be a pioneer force in making for that changed condition of society when, as a result of effective organisation of industry, poverty shall be entirely eliminated from human society, and the conditions of life become worthy of an intelligent and dignified people."[21]

PART FOUR: 1920–1945

THE AMALGAMATED ENGINEERING UNION IN THE YEARS BETWEEN THE WARS AND IN THE WAR AGAINST FASCISM

INTRODUCTION

The Industry, The Tools and the Engineer: 1920–1945

The Industry

The post-war years, or what must now be called the years between the two wars, were a period of intense economic strain and political change for Britain and for the world. Widespread unemployment, in some cases of tens of thousands and of millions became a feature of every capitalist country, with depressed areas and industries breaking out like sores. The periods of boom relieving the picture were short and at their height failed to eliminate unemployment completely or revive the depressed industries. In the organisation of industry and trade, free competition and free trade were finally replaced in most industries and countries by monopolies, combinations or trade associations and by a variety of tariffs and duties. The prosperity and continuity of an enterprise could no longer be judged solely by its technical efficiency, which tended to fall into second place behind the increasingly important factors of financial connections, and the degree of control of the market and prices which could be secured. Politically the independent working-class parties developed from a vision to a substantial threat and challenge to the established political groups. The October Revolution in Russia and the steady growth of the young Soviet Republic introduced an entirely new factor into world politics, and the emergence of Fascism in Italy and later of Nazism in Germany with paler imitations in most countries were indications of the methods that sections of the capitalists were prepared to use when necessary to maintain their position and profits.

The people of Britain had some justification for their surprise in finding themselves involved in a world-wide conflict in August, 1914. There was little justification for a similar surprise in September, 1939. The economic strain and political change had been world wide and world deep and while siren voices in 1929 may have tried to dismiss a financial crash on Wall Street as of little importance to Britain, or the political troubles of a China, a Czechoslovakia or a Spain in 1936–38 as " far away countries of which we know nothing," the very real interdependence of one part of the world on another was realised at the time by many, and by all a short while later whether in dole queues, air-raid shelters or slit trenches.

It was in this background that the engineering industry in Britain staggered, rather than progressed, from full employment in one war through twenty years of under-employment to full employment in a second war. By comparison with certain other industries, engineering as a whole could not be described as depressed in these years. It merely stagnated. The total numbers employed in the main branches covered by the Census of Production actually showed a slight increase, rising from 985,600 in 1924 to 1,073,400 in 1930 and 1,104,400 in 1935. But within this overall picture certain branches of the industry, for example, marine engineering, suffered heavily and from 1922 until 1935 unemployment among engineers never fell below 8 per cent. and in the worst years reached 30 per cent. or nearly 300,000 of those registered for employment in the industry. The export of engineering products increased in relative importance to the exports of other goods, rising from one-tenth of the total value of exports from Great Britain in 1910–1913 to an average of one-sixth in the years between the wars,[1] but there was a decline in the proportion of the total production of the industry being exported. By value the percentage exported had fallen from approximately one-half in 1907 to between a quarter and one-third from 1924 to 1935.[2] This decline in exports was a reflection of the limited expansion and of the changes in the importance of the different branches of the industry.

The near stagnation of the engineering industry was due more to national and international policies and to the absence of a constructive policy than to any inherent defects in the industry, but these confusions in national policy coincided with a time of necessary readjustment in the industry which under any circumstances would have been difficult. The continuous expansion of the industry in the nineteenth and twentieth century had been based, technologically, on the monopoly of the locomotive for long-distance traffic and of the reciprocating steam-engine as the source of power and, commercially, on the virtual trade monopoly of Great Britain in textiles and shipbuilding In the 'twenties and 'thirties, these monopolies, threatened before 1914, completely disappeared. Transport based on the internal combustion engine and electric power effectively challenged the locomotive and steam engine, and expanding foreign production in a less elastic world market undermined the textile machine-building and marine engineering trades. For the British engineering industry to maintain its position, let alone expand, the structure of the industry needed basic readjustment.

Some progress towards this readjustment was made and could be seen in the shift in the relative proportions of workers employed in the different branches of the industry in the years when a Census of Production was taken. The returns cover all establishments except public utilities and Government factories. The electrical engineering section, which had employed little over 5 per cent. of the workers covered in the engineering group in 1907, had expanded by 1924 to employ 15.4 per cent. and by 1935 it employed 22.5 per cent. The motor, cycle and aircraft section had employed only 7.4 per cent. of the total workers in 1907, but by 1924 the percentage had risen to 20.4 and by 1935 had reached 28.5. From their relative insignificance in the pre-1914 years, these two sections together accounted for the employment of more than half the workers in 1935. The re-armament programme in the years prior to 1939 and the expansion during the war increased their relative importance still further. On the other hand shipbuilding, which had represented roughly a quarter of the industry in 1907, was reduced to only 14 per cent. in 1924 and to 7.4 per cent. by 1935. The textile machine-building trade— " on which," wrote William Allan in the 1860's " our trade so much depends "— employed only 3.5 per cent. of the engineering workers covered by the Census in 1935.

Shifts in the importance of different sections of the industry were accompanied by changes in the products. For the first time the industry turned to the production of appreciable quantities of goods to be used directly by the consumer. Motor-cars, cycles, electrical equipment of all kinds, refrigerators, vacuum-cleaners, and radio sets, took their places on the sales counter of the engineering industry alongside machine tools, printing machinery, prime movers, generators, textile machines and marine engines.

There was also a marked change in the location of the industry. The tendency for the industry to leave London which had been marked at the beginning of the century by the passing of the marine engine business to the North East and North West coasts and to Scotland, was arrested. The dominance held for so long by Lancashire and Yorkshire faded, and a relatively new area, the Midlands, rose to equal importance with the older centres.

In 1930, of the workers in the main branches of the industry covered by the Census of Production, 20 per cent. were employed in the Greater London area, 25 per cent. in Lancashire and Yorkshire, and just under 20 per cent. in the Midlands, Warwickshire, Worcestershire and Staffordshire. In 1935 the trend was more marked. The numbers in the London area had increased to 25 per cent. of the total, in the Midlands to nearly 22 per cent. while the numbers in Lancashire and Yorkshire had fallen to 20 per cent. Both the Greater London area and the Midlands had attracted the " newer " motor-vehicle and electrical branches. In 1935, 65 per cent. of the engineering workers in the London area were employed in these trades and in the Midlands 83 per cent. In Lancashire and Yorkshire on the other hand in the same year only 33 per cent. of the workers were engaged in these branches.[3]

The vitality of the electrical, motor and aircraft sections of the industry and their development in new areas contrasted sharply with the decline of some of the older branches whose main centres became depressed areas. While a relative decline in these branches was to be expected with the shift of emphasis on to new products they suffered abnormally from the deterioration in world economic conditions and from the increasing *rigor mortis* which was setting in in some of the basic industries of Britain. The decline in these industries was reflected in engineering by emphasis on maintenance and repair rather than on renewal and re-equipment. For example, in 1930 a survey of the capital equipment in the Lancashire cotton-spinning and weaving industry showed that approximately 42 per cent. of the looms and 30 per cent. of the mules and ring spindles were built before 1900. Only 5.5 per cent. of the looms and 8.5 per cent. of the mules and ring spindles in use in 1930 were built in the previous ten years.[4] In the following ten years even less replacement took place. This stagnation in textiles was paralleled in the shipbuilding and mining industries, which clung to their old tools and failed to provide the engineers with the work of building new ones.

Combinations: The Post-War Boom

The tendency for firms in the industry to combine, which had been noticeable in the pre-1914 years, continued at a vastly increased pace. In 1917 the machine-tool makers had formed a trade association known as the Associated British Machine Tool Makers Ltd. and this example was followed by other sections such as agricultural implement makers. More spectacular was the amalgamation of firms. The very prosperous character of almost all sections of the industry during the war had provided both the capital and the spirit necessary for the growth of large concerns and the absorption of their smaller rivals. The share and loan capital of Vickers itself rose from £9,500,000 in 1913 to nearly £31,000,000 in 1921, while the capital of the Vickers group had risen from £20,000,000 in 1913 to over £53,000,000 in 1921 and by 1925 they possessed twenty six foreign subsidiaries and were associated with over 50 companies. The General Electric Company increased its capital from £1,250,000 in 1913 to £10,000,000 in 1921. The B.S.A. acquired three more companies and its capital jumped from £1,600,000 in 1913 to £8,700,000 in 1921. W. G. Armstrong Whitworth acquired five other companies and as many foreign companies and the capital rose from nearly £10,000,000 to nearly £19,000,000.[5] The same tale can be told of all the larger companies. The spokesman of the Employers' Federation suggested that the "devil" of foreign competition was the chief cause. "They [the employers] are beginning to see that 'Every man for himself and the devil take the hindmost' simply means that he will have the whole lot."[6]

But to this devil could hardly be ascribed the high valuations placed on the concerns being bought, often out of all proportion to their assets, nor the generous issue of "free" and "bonus" shares which sent the paper capitals of the large companies soaring. Thirty one of the leading engineering companies in 1911–13 had a combined share capital of £39,500,000. In 1922–24 their paid-up share capital had risen to £102,000,000, an increase of over 150 per cent.[7] Handsome bonuses were made by promoters, vendors, directors and shareholders alike, but when the excitement had died away these transactions left the industry with a heavy burden of worthless paper capital which required a high total profit to yield a dividend per share. The workers were asked to foot the bill by wage reductions and worsened conditions and only after stiff resistance was the folly slowly admitted and the paper capital written down. In 1925 Vickers reduced the book values of their assets by more than £12,000,000 and in 1927 Armstrong Whitworth announced that their assets would have to be written down by at least £11,000,000.[8] At intervals the lesser lights followed suit.

This wild financial excursion by the leading companies in the engineering industry was an important, though not the only, factor in transforming the hopeful prospects of 1919, when the industry could be said to be better equipped than ever before and the demand for its products almost unlimited, to depression, unemployment and short time in 1922–25.

The process of combinations did not stop. It continued in most branches until 1939 though without the accompaniment of bonus shares and exaggerated purchase prices. At the end of 1927 the two giants of the industry, Armstrong Whitworths and Vickers, combined to form a new company, Vickers Armstrong Ltd., to undertake the armament and naval shipbuilding business of the two companies. In 1931 the Textile Machinery Makers Co. Ltd., was formed by the amalgamation of six important firms in this branch. The electrical engineering and, to a lesser extent, the motor-vehicle branches were dominated by large companies. The General Electric Company and the Associated Electrical Industries Ltd., which included Metropolitan Vickers and controlled the British Thompson Houston Co. Ltd., led in electrical engineering and Morris, Austin, Rolls Royce, B.S.A., and Rootes in the motor industry. A handful of companies in each branch tended to control the trade. The rising aircraft industry similarly, from the start, was the preserve of the few—sometimes called the " ring" —and the policy of the Air Ministry and the large capital outlay required helped to maintain exclusiveness.

The re-adjustments between the different branches in the industry, the unplanned drift to new areas and the combination of employers in associations or amalgamations did not prevent continuous unemployment throughout these years and very heavy unemployment in the slumps of 1921–23 and 1930–33. These trade cycles were pleasantly described by the employers as " most probably " due to the " uncontrolled interplay of human character with its alternate expressions of optimism and pessimism."[9] For the engineering workers this " uncontrolled interplay " meant empty shops, derelict yards, reductions in wages and one third of their number on the dole. But these combinations did ensure, for the strongest of the firms, a satisfactory rate of profit in all but the very worst years. The largest companies in electrical and vehicle engineering in particular regularly presented balance sheets which made pleasant reading for the shareholders.

Development of the Tools

The necessities of production and Government assistance in capital equipment during the war years had made all medium and large sized firms aware of the potentialities of the new machines of the 1890's and 1900's—the capstan and turret lathes, milling machines, grinders, borers and radial drills. The progress of the succeeding 25 years was in the main the further development and refinement of these machines and the methods of production that accompanied them.

As with the lathe in the second half of the nineteenth century, many varieties of each individual type of machine were made. In the place of one or two types of milling machines, for example, appeared ten or twenty, each designed to perform a different range of work, with differing degrees of accuracy. Capstan and turret lathes became distinguished by numbers relating to types rather than by the earlier simple distinction of bar or chuck. A similar trend though not so marked occurred in grinding, spindle-drilling and boring machines. But all these machines, despite their increased specialisation, remained relatively general within a given range.

There was also a parallel development towards special purpose machines, first cousins of the older machines, which were designed either to perform relatively simple operations with economy of time, labour and original capital cost, or complicated operations with heavy initial outlay of capital and setting time, but long-run economies in production. The centreless grinder or semi-automatic boring machine were illustrations of the first development; the bar automatic-lathe or multi-spindle drill, examples of the second.

The improvements in machine tools were accompanied and affected by developments in both the cutting materials and in the materials to be cut. High-speed steel had not long consolidated its supremacy over carbon steel when tungsten-carbide steel appeared to challenge high-speed. In 1927 " Widia " tipped tools of German origin began to demonstrate in Britain their superiority to high-speed on a number of types of work. The spread of these tools, and of many others of the same type with different names, was slow, but where it was effected it was lasting and new demands were made on the machine-tool builders to provide the machines capable of the much higher speeds and coarser feeds now possible.

But this was a change of degree. More startling was the advance in metallurgy and the appearance of a wide variety of new materials to be machined. Mild steel, cast steel and brass, hitherto the main materials, became overshadowed by a long list of special steels and an even longer list of non-ferrous metals and alloys. In particular stainless steel, first developed in 1913, and aluminium and its alloys first used extensively on aircraft between 1914 and 1918, came into common use. The tougher and the softer materials equally calling for new methods and means of machining.

Better machines and tools were matched by greater accuracy of measurement. With the micrometer and vernier caliper in common use in the shops special instruments were devised for the more accurate work. Standard rooms kept at even temperature were built to house shadowgraphs, comparitors and master-gauges, and Johanssen slip-gauges, one of the biggest advances in measurement since Whitworth, were used on fine work. Jig boring machines on cork mats in self-contained shops, some working to 1/20,000 of an inch, were both measuring and machining instruments at the same time. A narrowing of the tolerances and limits on all types of work became possible.

The larger numbers of the product and of the components and the greater accuracy of machining and gauging meant that in its turn fitting underwent a further change; to bench-fitting and erecting was added assembling. On large jobs, where numbers warranted it, belt-assembly or another form of regular progress of work with each worker fitting a part took the place of the gang erecting one job at a time. On smaller jobs, assembly and sub-assembly, where there were sufficient numbers of components to throw out the misfits, appeared alongside and overshadowed bench-fitting, where the job was produced, by rectification if necessary, from a given number of components.

Improved methods of patternmaking, moulding and drop forging and widespread use of extrusion processes, particularly for alloys, produced castings, strips and forms close to finished size and tended to reduce the amount of machining on each article and component. Hot and cold press work with more and more powerful presses, and " fabrication " of parts by very rapid development of welding, further reduced machining and considerably widened the possible uses of the product.

Workshop Organisation

These refinements in the machines and improvements in the handling and part-fabrication of the raw materials further changed the basis of workshop organisation. The turner was no longer given a piece of steel and told " make another one like this," but the machinist received a part-section drawing and a part-finished batch of work from the presses or foundry, performed his operation, had it inspected and passed it on to the miller or driller. Extensive sub-division of the operations was inevitable.

As a result increased emphasis was placed on loading and unloading the machines and the progressing of the work through all its operations to the finished article. With the machining-time per article tending to be reduced, the time spent on fetching the job, the drawings and gauges, on setting the machine and on placing the job in position and taking it out again, became more important. Magnetic, hydraulic self-centring chucks and faceplates, small cranes, overhead rails and pulleys and special purpose machines assisted the rapid handling of work. Planned setting, extensive storekeeping, production lines and progress men helped to keep delays in actual working time to a minimum.

The sub-division of production and the greater emphasis placed on planning, preparing and progressing the work both increased and spread the responsibility of management. Organisation of production, experiments, designs, prototypes, planned ordering of tools, drawings and gauges became as important as production itself, but in this planning and in production, if the job was to run smoothly and efficiently, closer co-operation between all sections, shops and grades of workers was more necessary than ever before. The labourer with the castings, the fitter with the jigs, and the chief designer in the Drawing Office were dependent upon one another and shared the responsibility for production. Grades of authority were naturally necessary, but the work performed was inter-dependent. The day when the craftsman dominated the scene had gone, but equally the day when the " boss " ran the factory single-handed was fast passing.

By no means all establishments utilised the new techniques of production or the new methods of organisation. The experience gained in these methods between 1914 and 1918 was for many firms a finishing rather than a starting point. Technical and managerial stagnation co-existed with technical advance and managerial enterprise. This was partly due to the general economic conditions and the limited opportunities in some sections of the industry to use methods that were successful in branches such as electrical engineering and motor vehicles, where a large and relatively stable market existed for the products. On the other hand economic conditions and limited markets were far too often used as a cover for inefficient methods, and this failure to introduce progressive techniques tended to depress these sections still further.

It was reported in 1919 that bookstalls were full of tomes on Scientific Management,[10] but by many firms such books were bought merely to gather dust on the shelves. In 1921 the Institution of Production Engineers was formed to study and exchange ideas of efficient management and production. Its existence was a reflection of the growing understanding that the organisation of production was now as important as the technical operations themselves; but progress was slow. In the 'thirties in the burst of discussion on "what was wrong with the engineering industry" when "rationalisation" was preached by many as the panacea, the steps taken by many employers were along the familiar path of reduction of wages and "economies" in conditions rather than the reorganisation of the factory or the industry.

In addition to the group of firms which tended to use the methods of 1914, and the group which progressed in both technique and organisation, there was a third group, mainly small with a local monopoly of jobbing, repair and maintenance work, some of whose methods would have made Maudslay feel ashamed.

The war starting in 1939 accelerated both the spread and development of the new methods of production and organisation of production and demonstrated their adaptability. The aircraft industry was the outstanding example. From bench-methods there was a transition almost overnight to mass-production methods. The unlimited market for the product and the relatively unfettered supplies of capital equipment and labour assisted this transition, although the shortage of skilled labour and the rapid modifications in aircraft design nearly balanced these war-time advantages.

In ordnance and tank production, based on Government establishments and the motor-car industry, the need for improvements in methods was not so great and consequently the development was less spectacular, though the level of efficiency eventually reached was probably higher than in aircraft. Sub-contracting of components and sub-assemblies by all the main contractors enabled the smaller firms, where managerial ability and capital equipment permitted, to adopt similar methods and techniques. And the progress made in standardisation of materials and particular component specifications assisted all firms, large and small alike, to use quicker and more economical production methods.

The war did not produce any fundamental changes in machines or methods in engineering, but it did see the application on a wide scale of the minute sub-division of processes, the use of special purpose machinery, and the extensive pre-production organisation which had hitherto been the preserve of a few firms. This widespread application represented one of the longest strides forward ever taken by the British engineering industry and made the production methods used in 1914 and 1918 savour of the museum, the pre-1939 estimates of the productivity of labour seem false, and the conception of what an engineering shop should look like undergo a radical change.

For the Union, in the years between the wars, the violent trade-fluctuations and the existence of depressed and out-of-date branches of the industry alongside new branches adopting the newest techniques, made the determination of policy difficult. Unity of the engineers in the different sections and a national all-embracing policy had to be maintained, but the development of varying problems in the different sections at the same time made flexibility equally essential. The war narrowed the differences between the different sections through the wider adoption of the most modern techniques and the full employment of engineers, but the large influx of workers into the industry, the specialisation of labour and the use made of very small shops and garages brought new problems of organisation and policy.

The Engineers: Entry to the Trade

The changes in the tools and methods of production gave rise to a new class of engineers. No longer was the main channel of entry to the trade by way of apprenticeship; the majority of youths entering the industry did not serve their time. No longer was there a start for only the young; men of all ages, having tried other trades, drifted into the industry. No longer were there only youths and men in the shops and yards, women began to appear alongside the men.

Before 1914, the apprenticeship system had been declining. The call-up and increased demand for young workers on production during the war hastened the decline. By 1925 to 1926 it was estimated that only 32 per cent. of the youths under twenty one in the industry were working under apprenticeship systems, with a further 11 per cent. learners.[11] Continued unemployment in engineering made further inroads into the number of apprentices. In the depression of 1930 to 1933, in particular, there was little inducement to train at a low wage to acquire a skill which would become rusty on the dole, and other professions—notably blackcoated work—attracted many of the brightest and more intelligent of the potential engineers. Enquiries made by the Union in 1938 showed that of 1,332 fair-sized firms in the industry only 16 per cent. took indentured apprentices.[12]

The apprenticeship system itself had undergone a change. The numbers of those apprenticed under the premium system had become insignificant and in 1925-26 only 31 per cent. of the total apprentices were serving under an indenture ; the remainder were under a verbal agreement. Unemployment and uncertainty of the future was undermining the written contract. This decline in the apprenticeship system was uneven. In 1925–26, in the northern centres of the older branches of the industry, such as marine engines, textile machinery and locomotive building, 75 to 80 per cent. of the firms still employed apprentices or learners. In the Midlands and southern counties on the other hand, and in the newer branches of the industry, such as motor and electrical engineering, less than half the firms employed youths under a scheme of apprenticeship or training. An exception among the newer branches was aircraft, which, in its infancy, adopted apprenticeship widely.[13]

Other factors affecting apprenticeship were the growth of specialisation which called for a new approach to " learning the craft," the spread of piece-work, which reduced both the inclination and the time which could be spent by skilled men to teach apprentices, and the traditionally low wages paid to apprentices, which became glaringly unjust as the earnings of unapprenticed youths on piece-work rose. A few large firms, by elaborate schemes, attempted to adapt apprenticeship to the changed conditions and considerable headway was made in the provision of technical education at Technical Institutes and in some Universities. But the effective marriage of the workshop and the school remained, by and large, a problem discussed rather than a problem solved.

The alternative method of recruiting to the skilled ranks which became widespread was upgrading. An unapprenticed youth or young man became skilled through practice rather than planned instruction on a particular set of machines and was given, on that particular work, the responsibilities of a fully skilled man and sometimes the skilled rate.

New Trades and Grades of Skill

The second major development in the industry was the increase in the numbers of the newer trades and of workers following them. Between the 1921 and 1931 Census while there was a general decrease in the number of workers following the older trades of fitter, turner, millwright and smith, the numbers of those working at newer trades increased. The drillers nearly trebled their numbers while oxy-acetylene welders doubled theirs. In trades such as pressing and stamping, tool-setting, polishing, grinding and sheetmetal work, big increases were also recorded.[14]

The division and sub-division of the processes of production and the use of special purpose machinery and assembly belts made it possible for men without any direct engineering experience to undertake production work in many of these newer trades. Consequently workers in these trades were generally covered by the general definition " semi-skilled," although by no means all the jobs done or machines operated by more than half the workers in the industry in the 'thirties were of this type. In practice the term "semi-skilled" covered a very wide range of different skills, from the automatic feeder on the one hand to the universal miller or internal grinder on the other. But the tendency for this group to increase at the expense of both the fully skilled men and the labourers is illustrated by the following table :—

The Proportion of Skilled, Semi-skilled and Unskilled Workers in Firms belonging to the Engineering and Allied Employers' National Federation.[15]

	Approximate Percentage of		
Year	Skilled	Semi-skilled	Unskilled
1914	60	20	20
1921	50	30	20
1926	40	45	15
1933	32	57	11

New methods of production widened the range of skills practised, and further divorced the term "semi-skilled" from the reality to which it had approximated before 1914, turning it into a mere statement of the rate of wages paid.

The number of women employed in the industry, many of whom were covered by the general definition "semi-skilled," also increased. In 1907 in the main branches of the industry only 3 per cent. of the total number of operatives were women, but by 1924 the figure was 8.5 per cent., by 1930 10 per cent. and by 1935 13.2 per cent. The numbers employed in the different branches showed wide variation. For example, in electrical engineering in 1935, 35 per cent. of the operatives were women but in the shipbuilding in the same year only 6 per cent.[16] But the trend in the industry as a whole in spite of unemployment was towards a steady increase.

The skilled men found themselves losing their numerical superiority in the shops and being left with the more difficult and intricate parts of the work. They also spread to new trades and departments in the factory. While the production lines and machines needed them less, they were vital to effective supervision, maintenance, inspection and the toolroom. They also went further afield. The new methods of separate experimental shops, large drawing-offices, planning, progress, rate-fixing and costing departments needed men with a sound knowledge of production techniques and problems. Even in occupations such as salesmanship and demonstration, it was found valuable to employ the men who could make, as well as work, the machine or product to be sold.

The effect of these changes on the trades followed by the membership of the Union was marked. Of the members admitted each year, the fitters lost the dominating position which they had held since 1851. Between 1920 and 1925, together with the millwrights, they accounted for 57 per cent. of the new entrants, but in the years 1926 to 1939 the percentage had dropped to 43. The proportion of turners remained fairly constant at 13 per cent. of the new entrants, while machinists, electrical engineers, inspectors, smiths, welders and those following but a patchwork of local agreements and customs gave the skilled men on particular jobs a differential above the district rate and the less skilled workers obtained varying rates, some related to the skilled, others to the labourers' rate. In these agreements in different parts of the country uniformity was conspicuous by its absence.

For workers on payment by results, the basic rate was of direct importance only in so far as it was the rate upon which their piece-work percentage was calculated. The numbers of these workers rose rapidly. In 1923 in a selection of Federated firms 41 per cent. of the fitters and 51.6 per cent. of the turners were paid by results. In 1927 the proportions had risen to 51.6 per cent. and 64.6 per cent. respectively. The proportion of machinemen at this later date was 55.4 per cent. and for all workers 49 per cent. By 1940 the proportion of turners and machinemen on piece-work was between 75 and 80 per cent., and 60 per cent. of all workers were employed under payment by results.

The national agreement of 1919 laid down the conditions under which piece-work prices were to be fixed, the percentage over time rates that they were to yield—33⅓ per cent., cut to 25 per cent. in 1931—and the circumstances under which the prices could be altered. This agreement secured some degree of uniformity, but did not end the opposition of the Union members to piece-work nor the struggle to secure the just operation of such systems. The opposition of the members to piece-work varied in the different branches of the trade and from shop to shop. In some cases it had the effect of making piece-work operate in almost the same manner as day or time-work, with little distinction between the earnings of different operators. Further the percentage above time rates fixed in the agreement was a minimum only and the actual basis varied with the state of union organisation and the branch of industry. In the motor-vehicle branch, for example, where organisation was good and the trade prosperous but seasonal, prices and times were fixed nearer to time and a half than to the agreed minimum.

The establishment of a fixed percentage over time rates for those on piece-work raised directly the problem of the wages of workers on time rates. " Lieu rates "—in lieu of piece-work—were introduced to compensate these time-workers and bring their earnings near to the minimum of the piece-worker. For the particularly skilled grades, and of these a high proportion were on time-work, merit rates under one name or another were paid by some firms in recognition of extra ability. National agreements in 1927, 1942 and 1943 secured increases of 2s., 8s. and 6s. respectively for certain classes of these time-workers, but in the industry as a whole the amazing variety of different rates paid to time-workers was as puzzling as the basis on which the different " bonuses " were granted by the employers.

The rate for apprentices and youths until 1937 bore only an indirect relation to the skilled man's rate and in most cases was arbitrarily fixed by the employer. In 1925–26 the average wage of apprentices was 10s. 7d. in the first year of their apprenticeship and

25s. 8d. in their last year.[17] Expressed as a proportion of the skilled man's rate it represented roughly 20 per cent. at 16 years and 45 per cent. at 20 to 21 years. By agreement in 1937, apprentices at different ages were entitled to a percentage of the rises given to skilled men and agreements in 1941, 1942 and 1943 fixed the rates of apprentices at proportions of the rate of the skilled fitter. In the 1943 agreement, the rate at 16, for example, was 27½ per cent. and at 20 years 62½ per cent. For the youths in the industry on time-work some progress had been made towards making the structure less crazy and less complicated.

No national reduction in the working week below the 47 hours secured in 1919 took place in these years. Overtime was limited by agreement to 30 hours in a month and national agreement was reached on the minimum rates to be paid for these extra hours. Before 1931 overtime on day shift, each day standing by itself, was paid at time and a half, and on night shift, time and a third was paid for all hours worked and time and two thirds for overtime; Sundays were paid double time. After 1931, overtime rates were dropped to time and a quarter for the first two hours—increased to time and a third in 1937—and subsequently time and a half, and on night shift all hours worked were paid time and one sixth with the same rates for overtime as on day shift.

While overtime was worked in some branches of the industry, even when unemployment was rife, short-time was a common feature of the period between the wars. In 1928, a year of comparative prosperity, the employers themselves estimated that only 83 to 84 per cent. of the workers employed in all sections of the industry were working a full week, and in 1933, the figure had dropped to 65.5 per cent. In textile machine making, the comparable figures were 46.3 per cent. in 1928, while in 1933 only 16.7 per cent. were working a full week.[18]

Size of Factories and Working Conditions

The engineers continued to work in factories of all shapes and sizes, from tiny repair and jobbing shops in a back street to huge factories covering acres. But the majority were employed in the larger shops. In 1931, of 1,169,688 persons employed in 26,306 different establishments carrying on some type of engineering or shipbuilding business, 557,175 were employed in the 433 factories which employed over 500 persons or, expressed in percentages, 48 per cent. of the workers were employed in 1.6 per cent. of the number of separate establishments. At the other extreme, 12 per cent. of the workers were employed in 80.5 per cent. of the factories which employed fewer than 25 persons.[19] In 1935, a slightly larger sample showed the same results. Of 1,209,969 workers in 31,305 engineering and shipbuilding establishments, 53 per cent. were working in factories which employed over 500 (1.4 per cent. of the total number of establishments) and 8.3 per cent. worked in the 24,074 shops with under 10 workers. While the small shops still persisted in the industry, between two thirds and three quarters of the workers were employed in the 2,000 medium and large shops from 100 workers upwards, and one half in the 500 large shops of 500 upwards. Production in large factories was particularly conspicuous in the " newer " branches. In motors and cycles, 53 per cent. of the workers in all shops, excluding those with less than 10 employees, were employed in factories of 1,000 workers and upwards. In electrical engineering 60 per cent. of the workers were employed in such factories and in aircraft the proportion rose to nearly 75 per cent.[20]

In the medium and large factories working conditions had improved, particularly in the newly-built factories. The new methods of production with their emphasis on timing and speed were not possible in shops which were cluttered-up, dirty or ill-lit, though many firms found the " depression " an adequate reason for avoiding any new capital outlay. The technical improvements that took place, were not as a rule accompanied by any conscious effort to improve the welfare of the workers. Indeed, it was a general complaint among engineers that such methods were introduced merely to speed up the job and dehumanise the individual worker. It was for this reason that Bedaux, time- and motion-studies, and methods such as the assembly line were regarded with suspicion and vigorously opposed by the workers in the industry. " Welfare," mainly for women, had appeared in engineering factories between 1914 and 1918, but grew few roots. While some firms assisted in sports and social clubs for their workers and some established welfare committees, very few concerned themselves with a consistent study of working conditions.

The Factory Act of 1937 marked a new stage in working conditions in the workshops. Lavatories, washing accommodation, heating, ventilation, provisions for women and young persons had to conform to certain minimum standards. Special occupations had special regulations. The enforcement of the Acts depended on a somewhat stretched Factory Inspectorate but the vigilance of shop stewards in the well-organised factories helped to enforce observance of the minimum standards required, and in some cases secured conditions above the standard.

Accidents continued to be an evil in engineering, though a lesser evil than in some industries. The newer machines and their use by less experienced workers, particularly milling, drilling and presswork, coupled with the speed-up in the shops, introduced new hazards. And a factory inspector could say of the centre lathe " although other machines may be responsible for more accidents in proportion to the number in use, yet the total arising from the lathe is higher in the aggregate than that from any other type of mechanism."[21] Better fencing, guards, instruction and care on the one hand, and heavier penalties on the employer for neglect on the other, were the two main methods of combatting the loss of health, production and livelihood which resulted from accidents. The Workmen's Compensation Act of 1923 made First Aid Boxes compulsory in all factories; in 1927, under powers given in the 1923 Act, the Ministry of Health " persuaded " large engineering firms to introduce " Safety Officers," and the 1937 Act made such officers and many further safety precautions compulsory. The Workmen's Compensation Acts of 1925-1944 made it easier for workers to claim for injuries received in the course of employment but still left the payments to the injured workmen inadequate, and the anomalies numerous. Legal assistance by the Union to members who suffered accidents, and publicity on the rights of the workers under the Act, prevented unscrupulous employers taking advantage of the physical and mental strain of an injured worker. But the main battle against injuries and accidents was not in fighting for a pittance for the maimed but in preventing the accidents from occurring at all. In this respect a big advance in outlook was made in these years compared with the previous philosophy that " until you had lost a finger or a joint you weren't a proper engineer." In the years before the war, and particularly during the war, the workers themselves became more conscious of the part they could play in preventing accidents and safeguarding their health. In many firms safety committees were established where the workers' representatives could ensure that the management was taking every possible measure to ensure safety and at the same time impress on their fellow workers the need for great care in operating machines and handling materials.

The living conditions of the engineer, as with any other worker, depended on whether he was unemployed or in a job, what rate of wages he received, and the area in which he lived. The Union continued to loan money for the purchase of house property, and there is no doubt that those who were able to secure regular employment improved their conditions. At the same time, it was equally certain that the nine million persons in Britain reported in 1936 to be living on a quite inadequate diet[22] included many engineers and their families. In times of sickness the Health Insurance Section of the Union—the A.E.U. Approved Society—ensured that members would be treated with the promptness and sympathy that was needed, but this did not make the money go any further. Old age pensions were paid at 65 years instead of 70, in addition to the Union's superannuation benefit, but even so the amount was hardly sufficient to give the old engineer any of the well-earned luxuries of modern living standards.

The War and the Engineer: 1939–1945

The ravages that continuous unemployment and the decline of apprenticeship had made in the ranks of the skilled engineers were felt keenly when the war raised demands for engineering products to unprecedented heights. The absolute shortage of skilled engineers became a limiting factor on production within eighteen months of the outbreak of war. In addition to the increase in the total numbers employed in the industry by the absorption of the unemployed and the transfer of workers and equipment from peace-time products to munitions, large numbers of workers, men and women, from non-engineering trades had to be recruited or directed and trained. The training of new entrants, the breaking down of jobs for them to perform and the assistance to the unemployed to regain their skill and confidence was successfully achieved through Government Training Centres, training shops attached to factories and the continuous help of the skilled men, but the total time, energy and effort spent in this direction was a sad commentary on the state of the engineering industry between the wars.

The new entrants to the industry were youths, men from other trades, and women. The proportion of these new entrants and less skilled workers to that of the skilled engineers varied from firm to firm. In some, for example, the Rolls Royce factory at Hillingdon, newly built and equipped and working on mass production lines with details and design worked out at the parent factory, there were less than 5 per cent. fully skilled workers.[23] In others, for example, a number of factories in the machine-tool branch, the proportion was only slightly below the pre-1939 percentage. In the industry as a whole the most spectacular change was the increase in the numbers and proportion of women employed In the largest war-time engineering branch—the production of aircraft—the proportion rose from 7 per cent. in 1935 to nearly 40 per cent. in 1944. With the peak employment in this branch approaching two million, this represented between 600,000 and 750,000 women workers. The Royal Ordnance Factories, after an initial period of a relatively high proportion of skilled male labour, employed when in full production an even higher proportion of women. The male trainees and dilutees were scattered throughout the industry in every shop and in almost every occupation from labourers to markers-off in the tool room. Many developed skill, but for the most part it was skill of a particular and limited character applicable to one or two operations.

The Union, having accepted the principle of an " industrial union " in 1926, adapted itself in war-time to cater for the new entrants. A section was established for the workers transferred from their own trades to engineering, Section V, T.R.A., and in January, 1942, an entirely new development took place, when a section for women and girls was created. By the close of 1944 this section represented nearly 15 per cent. of the total membership.

Obtaining a job was no longer a problem for the engineer ; where and what kind of a job were his chief concern. In the first year of the war, advertisements in every paper gave members a choice. But in March, 1941, the Essential Work (General Provisions) Order, prevented workers leaving a job without the consent of the National Service Officer or from choosing another job without the consent and knowledge of the Labour Exchange. For a short time, the Union was allowed to assist its members in obtaining the best situations, but in 1942, with the growing shortage of engineers and the need for accurate allocation of all grades of engineering workers, especially the fully skilled, complete control of the employment of engineers was vested in the Ministry of Labour. Direction by the Government replaced attraction by the employers or the Vacant Book of the Union.

The average provincial rate for skilled men rose from £3 4s. 0d. in

1939 to £4 1s. 6d. in 1944. Skilled time-workers received an extra 14s. Day-workers received an extra minimum of 6s. over the basic rate and national bonus, and the piece-work percentage rose from 25 per cent. to 27½ per cent. Women's rates rose from £1 12s. 0d. in 1939 to £2 16s. 0d. in 1944, and a special agreement covered their rates when they were performing work commonly performed by men.

Shift-working and overtime were common in all sections of the industry. The amount of overtime and Sunday work varied with the military situation and the view taken by particular managements of the utility of excessive hours, but throughout the industry it rarely fell below a minimum of five or six hours a week—raising the actual working week to that commonly worked before 1914. The skilled workers in short supply worked on an average a much longer week. Night shift working for almost the first time in the industry was widely practiced.

Conditions of employment underwent two marked changes. On the one hand the Essential Work Order introduced Government-backed penalties for absenteeism, late-coming and misconduct and, while the right to leave his job was taken away from the worker, the employer himself could no longer dismiss an employee without permission of the National Service Officer. On the other hand, serious efforts were made by many employers and by Government Ministries to get below the surface of the outward signs of dissatisfaction in the workshops and to analyse and remove the causes. The enforcement of the Factory Act of 1937, and the large influx of women workers, by themselves entailed a reorganisation of working conditions. But more than this took place. Personnel and labour management catering for both sexes and all types of labour was introduced in the engineering industry and increased attention by some managements to the problems and well-being of the individual worker was matched by an equal increase in the attention paid to these matters by the Union. The health of the war-worker, the quality of the canteen food, the bus or train service to and from the factory, and the conditions on night shift were all questions which began to figure along with wages and piece-work prices on the agendas of branch meetings and shop stewards' committees.

The expansion of the industry and of the individual units, the increasing impersonal character of management, and the spread of new methods giving rise to a new class of engineers presented the A.E.U. with new problems of organisation. At the same time the effects of these changes on working conditions and on the wages structure of the industry threw into relief the need for new policies.

While members rarely travelled overseas in search of a job in the years between the wars, the offshoots of the Union planted in Australia and South Africa in earlier decades withstood the world economic depression and continued to grow. This was most marked in the case of the Commonwealth of Australia, which could record an increase from 16,000 in 1920 to 28,000 in 1939 and 72,000 in 1944. South African branches had a more difficult time and only very hard work by a devoted group of members kept the Union alive in the early 'thirties when the membership dropped to 1,500. But by 1939 the numbers had risen to their 1920 figures and in 1944 were over 14,000. A large measure of autonomy had been granted to these countries and they published their own monthly journals and had the right to make some adjustments to rules to suit the particular conditions, but this measure of autonomy did not affect in any way their status as part of the Union with rights and responsibilities to the Union.

CHAPTER IX

The 1922 *Lock-out and the Aftermath: 1920–1926*

The year 1920 saw the labour movement on the crest of a wave which had borne it upwards through the post-war boom of 1919 and the early months of 1920. Never had the organisations of the workers seemed so strong. The numbers of trade unionists affiliated to the T.U.C. had risen from 4,532,085 at the end of the war to 6,505,482 in 1920. The unions had been able to achieve increases in wage rates and shortening in hours. The growth in membership was accompanied by a unification in union structure through a series of amalgamations in the building and engineering trades and among transport and dock workers. Nor were the gains confined to the industrial field. The Labour Party had increased its representation in Parliament, and in the municipal elections of 1919 had gained a voice in the local government machinery in many cities. The Coalition Government had been forced through labour pressure to introduce some important social legislation relating to health, education and housing. The Councils of Action of 1920 had succeeded in stopping the shipments of armaments to the armies of intervention who were attempting to destroy the new Socialist Republic of Russia.

But in 1921 the post-war prosperity came to an abrupt end. It never had a sound basis. The war-time controls had been lifted, an inflationary movement had started, prices soared and industrial activity increased. But Britain, and certainly Europe, was far too dislocated after the war to stand the strain of this uncontrolled boom, particularly when it was accompanied by financial jerrymandering, and the boom collapsed like a pricked balloon. The numbers of unemployed in every industry began to mount alarmingly until they reached more than two million. Industry was virtually at a standstill. It was the sign for the employers to resume the offensive. In one industry after another during 1921 and 1922, the workers found themselves fighting losing battles. The gains of 1918–1920 disappeared almost overnight.

From 1923 until 1926 the workers' organisations were still on the defensive, but searching for ways and means to resist further attacks from the employing classes and build their organisations to the pitch where they could challenge the capitalist system with a socialist alternative. These years saw the formation of the first Labour Government, although as yet Labour was in a minority when opposed by the combined strength of the Conservatives and Liberals in the House of Commons. They also witnessed the great demonstration of the power and unity of the workers in the General Strike of 1926.

The history of the engineers ran parallel with that of other sections of the workers. During the immediate post-war years they succeeded in obtaining a shorter working week and higher wages, and the establishment of the Amalgamated Engineering Union on July 1, 1920, raised the hopes of many members that these advances would be continued. Limited as the amalgamation had been it was thought that once the door was opened others would realise the advantage of unity and stream in The Union could already claim to speak for nearly half a million skilled engineers, a considerable majority of the organised workers in the industry, and with the consequent diminution in inter-union demarcation strife, it was confidently expected that great gains could be achieved, both in raising wages and improving working conditions.

In the first six months of its existence the Union made rapid progress. In September, 1920, overtime rates for the whole country were fixed for the first time in the Overtime and Night Shift Agreement. Under its terms overtime was to be paid time and a half, Sunday work double time, and time and a third for night shift. Systematic overtime was specifically deprecated but when it was necessary it was limited to thirty hours per month. In December, 1920, the Double Day and Three Shift Agreement was signed, having been negotiated on the principle that it was necessary to absorb some of the unemployment in the industry by three-shift working.

The main concern of the Union was to obtain a rise in wages. On March 10, 1920, the Industrial Court—the successor to the war-time Committee on Production which acted as an arbitration tribunal—awarded the engineers a rise of 6s. on the war bonus against their claim for 15s. on the basic rate. This rise brought the average rate of the skilled workers to £4 9s. 0d., but this was only equal to the purchasing power of £1 14s. 0d. in 1914.[1] An application for a further rise of 6*d*. an hour, heard before the Industrial Court on June 29, 1920, was refused, the employers claiming that the prospects of improved trade had not been realised, that markets were falling, that foreign competition was too strong and the engineering industry generally on the down grade. As a result of the refusal to award an increase, the unions decided in order to have greater freedom of action, to terminate their agreement of 1917 whereby wage disputes were referred to the Industrial Court, and to make an application to the Engineering Employers' Federation directly for a national increase of 6*d*. an hour.

The Depression Sets In

Negotiations with the employers on this claim dragged on through the autumn and winter of 1920 and the first two months of 1921, the employers refusing to give a definite reply because they claimed that the application was bound up with other questions such as apprenticeship and the machine question, which should all be discussed together. While these negotiations were proceeding economic depression was rapidly setting in. The summer of 1920 saw a halt in the rise of wholesale prices, the first sign of the oncoming depression; then prices sagged and continued to decline. In engineering, usually one of the first industries to feel the contraction, unemployment began to rise steadily. Between December, 1920, and July, 1921, the number of

Union members out of work increased from 19,976 to 114,684. No trade union, however strong, unless it could challenge and control the economic organisation of the industry could beat the depression which was sweeping the country.

Thus within a year of its formation the new Amalgamated Union, because of factors over which it had little control, found itself forced on the defensive. And not only was it fighting against the results of the economic depression; it was also faced with a stronger employers' organisation. In 1918 the National Employers' Federation, composed chiefly of firms in the Birmingham area, had joined the Engineering Employers' Federation. By 1922 over 2,000 firms were members of the new Federation, compared with the 830 member firms in 1912. Moreover, some of the firms had considerably greater power than previously, due to the numerous combinations and amalgamations in the industry in the post-war boom.

The employers eventually met the Union in conference on March 10, 1921, and they not only refused to concede any wage advance but intimated their intention of reducing wages in federated firms by 6s. a week for workers on time rates, cutting piece-work prices by 15 per cent. and withdrawing the 12½ per cent. and 7½ per cent. bonuses conceded in 1917 and 1918.

When the A.E.U. again met the employers on this wage issue it was in conjunction with the representatives of the other unions affected; the Federation of Engineering and Shipbuilding Unions representing thirty five different societies, the Federation of General Workers representing twelve unions, and the National Union of Foundry Workers. The spokesman for all the unions, J. T. Brownlie, the President of the A.E.U., told the employers frankly that they would get no joint recommendation for a reduction in wages. He declared that " Never in the history of trade unionism and of the engineering and shipbuilding industry in particular were we faced with such a demand to reduce wages by 16s. a week. Never in the history of our negotiations with you either in conference or before an agreed tribunal was ever an advance of wages conceded amounting to 16s. per week. All that we have received, the highest amount ever given in any award was 6s. in two instalments and 5s., I think, on three occasions, and the Churchill award. You are asking too much from us."[3]

The employers, however, were adamant, and refused to submit the case to a Court of Inquiry. The unions then sought the intervention of the Minister of Labour. He refused to set up a Court of Inquiry but kept the negotiations open and induced the employers to lengthen the period over which the reductions were to be made by one month. But negotiations again broke down and a joint conference of representatives of the unions concerned recommended the Executive Councils of each union to instruct their members to cease work when the reductions came into operation. When informed of this development the Minister realised that the situation was serious and once more intervened. The proposals of the employers were put to a ballot of the members of all unions but were decisively rejected. As a result the employers agreed to drop, temporarily, the demand for the withdrawal of the 12½ per cent. and 7½ per cent. bonuses, and the Executives agreed to put the new proposals to ballot with a recommendation of support which resulted in a majority in favour.

The employers were not satisfied with even this victory. Within two months they again raised the question of the 12½ and 7½ per cent. reductions. In spite of a hard fight by the union representatives no headway was made in persuading the employers to reduce their demands, and they were put without recommendation to a ballot of the members who, by a small majority, accepted them. Thus the full demands of the employers had been won, involving a sum in the region of £50,000,000 a year.[8] The A.E.U. had suffered its first severe defeat.

Overtime, the Manning of Machines, and Apprentices

A simultaneous offensive was being conducted by the employers on working conditions. The chief issues at stake—overtime, the manning of machines and the Union's claim to negotiate on behalf of apprentices—had a long history. The employers had been forced to recognise that wage rates and the length of the working week were issues to be decided freely and jointly through the machinery of collective bargaining. But they considered that issues of entry to the trade, manning of machines and when overtime was to be worked—issues just as vital to the engineers as wages and hours—were matters on which the employers had the right to act first, and if necessary discuss afterwards. During the war, particularly on the manning of machines by dilutees, some safeguards had been won. But in the depression, with the unions in a weaker position, the employers with the flag of "Managerial Functions" flying, began to attack the right of the unions to any say whatever on these matters. The existence of widespread unemployment among skilled engineers made a voice in fixing conditions of employment not merely a theoretical problem of rights or functions, but a bread-and-butter concern for the engineers and their families.

The dispute on overtime arose from the differing interpretations of the Overtime and Night Shift Agreement and the embargo placed on all overtime by some District Committees in view of the number of men unemployed. The employers claimed that under the Agreement prior consent of the Union before overtime was worked was not required. The Union, on the other hand, claimed that consultation should take place before overtime was worked and interpreted the agreement as acceding to this principle, but informed the employers of their willingness to discuss the question in order to arrive at an agreed interpretation, a request which was refused by the employers.

The issue of manning machines was a similar one. The employers claimed that they had the sole right of deciding who should work the machines, and called on the Union to allow Messrs. Platt of Oldham and Babcock & Wilcox of Renfrew, where disputes were in progress, to select the men to operate their machines without discussion with the Union. The Union for its part maintained that the skilled rate should be paid to all operators on machines turning out skilled work, and called for a minimum rate for each machine. A strike at Hick, Hargeaves & Co. of Bolton, at the beginning of 1921, when the firm had tried to put apprentices on a system of payment by result without consulting the Bolton District Committee of the Union, was an effort by the members locally to secure the right to negotiate for apprentices. The Union had repeatedly requested conferences to discuss the issue of apprentices, but the matter had been held in abeyance by the employers.

Such were the issues on which the employers in early April, 1921, threatened to lock out all A.E.U. members in federated shops unless their demands were conceded in full. The vital issue at stake was summed up by a statement of the Executive Council:

> " The real position is that unless we are prepared to submit to the employers' arbitrary interpretation of the Overtime Agreement and withdraw from the position we have taken up on that and the apprentice and machine question, we are to be threatened with a national lock-out of federated firms, the onus for which the Federation is attempting to thrust on the shoulders of the A.E.U. For the employers to claim the right to be the sole arbiters as to when overtime shall be worked, at a time when over 55,000 of our members are unemployed indicates that they have learned nothing, that circumstances are of no account, that they still harbour the old idea of master and man."[4]

A special National Conference called to consider the employers' demands pledged itself " to meet this threat of the national lock-out by the employers by using the full strength of our organisation in such a manner as shall be agreed upon by the Executive Council."

But while the Executive was prepared to resist to the utmost encroachments on their right to consultation on questions affecting the conditions of employment of skilled workers and apprentices they made every effort to find a solution, for they knew that their position was severely weakened by the depression. At the same time some members pointed out that the depression was likely to get worse rather than better and considered that since the employers were determined to fight the issues out it was better to make a stand then rather than wait until the funds of the Union were further exhausted. Caution prevailed.

In April the Executive agreed to terminate the strike at Hick, Hargreaves & Co. on the understanding that it would not prejudice national discussion of the apprenticeship question and that the employers would withdraw the threat of a lock-out; this the employers accepted while other negotiations continued. But the crisis was merely postponed, and after their victories on wage issues in July and September, 1921, the employers returned to the attack. By this time they had inflated the issues of disagreement into a fullblown claim that the unions were trying to usurp their right of " Managerial Functions."

The Union had now 90,000 members unemployed, who were causing a heavy drain on finance, so that in order to stave off the renewed threat of a lock-out the Executive agreed, after sixteen and a half hours' continuous negotiation on November 18, 1921, to recommend to their members the acceptance of a memorandum which confirmed the York Memorandum and Shop Stewards' Agreement but also conceded the right of managements to introduce changes pending negotiation and made them the sole judges of the necessity for overtime.

But the membership thought differently. They had not built a great Amalgamated Union to be treated with contempt once trade began to slump. Before them was the lesson of the wages struggles, where concessions had not satisfied the employers but had increased their appetite. In addition, it was clear from the statement of the employers that the overtime issue was merely a stalking horse to cover a general attack on the right of the union to bargain collectively on workshop conditions and that the success of the employers on overtime—the most illogical of all their demands—would be followed by a rout all along the line. Thus in January, 1922, the advice of the Executive was rejected by 50,240 votes against 35,525 and the proposals were defeated. As a result the Engineering and National Employers' Federation posted notices in all federated shops that as from Saturday, March 11, 1922, it would not be possible to give employment to members of the A.E.U.

The employers then dragged forty six other unions into the dispute, demanding that they sign the memorandum rejected by the A.E.U. These other unions, not being party to the Overtime Agreement, had no quarrel with the employers and they would not sign the memorandum before it had been put to a ballot of the members. By a three-to-one majority vote the members stood by the A.E.U and rejected it, and the employers consequently posted notices against them.

Strenuous eleventh-hour efforts were made to avert the lock-out. On March 7 the Minister of Labour met the Executive Council and made arrangements for further conferences with the employers. The proposals put forward as a basis for discussion by the Union were categorically rejected by the employers and it became clear that they would be satisfied with nothing less than a complete surrender on all fronts. Though the notices against the other unions were temporarily suspended, those against the A.E.U. came into operation on March 11.

Thus the conflict between the unions and the employers which had been looming in the background since the start of the depression became a reality. The expansionist policy of the directors of engineering concerns in the post-war boom, the issue of bonus shares and the purchasing of other companies at inflated prices had placed a heavy burden on the industry. The consumers showed themselves unwilling to foot the bill by paying higher prices, so the workers were asked to pay by lower wages and worsened working conditions. The determination of the employers to pursue this policy was being matched by an equal determination to resist by the unions. In April, 1921, the employers had threatened a lock-out if the unions did not concede on working conditions. In July, 1921, A.E.U. members were prepared to strike against the 16s. reduction in wages. Each time the conflict was narrowly averted but in neither case had the problems been solved, merely postponed. As the depression deepened the employers became more convinced that the workers must make further sacrifices; after giving way on one issue after another the workers became convinced that resistance was their duty. On March 11, 1922, their respective convictions came into open conflict and the battle, which had been brewing since the amalgamation, started.

The Lock-Out

While the employers talked of abstract questions of "Managerial Functions," the bread-and-butter character of the issues at stake were strikingly illustrated in the Union's cartoon showing a starving family in the background and in the foreground an engineer, who asked "Must I work overtime while my mate and his family starve for want of work?" Never had the demands of the employers been so arrogant or so false, and rarely had the Union had so persuasive a case. But as the miners and other sections of the working class had found, a good case made no impression on the hard-faced business men who dominated post-war Britain. Single-handed battles in a country stunned by unemployment and broken promises were doomed to failure, but the leadership needed to co-ordinate these struggles and organise a united defence did not exist. The engineers found the cards stacked against them from the start. "Never," wrote a contemporary observer, "have they had to face such a crisis in such conditions as obtain to-day." The best that could be hoped for was a concession from the employers which would enable the men to return to work with dignity.

A few days after the struggle commenced the National Joint Council of Labour, consisting of representatives of the Labour Party, the Parliamentary Labour Party and the T.U.C., made an offer to act as mediators which was accepted by the A.E.U. and other unions who were as yet only threatened with lock-out. After informal discussion with Sir Allan Smith, the Director of the Employers' Federation, the National Joint Council presented a memorandum on March 24 to serve as a basis for a joint conference. In essence the memorandum was the same as that of November, 1921, which had been rejected by the members, but the Executive alongside the other unions agreed to accept it as a basis of discussion provided the employers withdrew the lock-out notices. Negotiations were resumed but reached an impasse when it became clear that the employers would not withdraw their notices nor continue negotiations unless the memorandum was accepted as terms of settlement without modification. On April 1, the representatives of the National Joint Council of Labour met Sir Allan Smith again and drew up yet another memorandum. It contained the same principles as previous memoranda, differing only in the form of words, and was consequently rejected by the Union. After the intervention of the Prime Minister, Mr. Lloyd George, in whose opinion the terms of the latest memorandum were an improvement and who advised the negotiating committee to accept them, the other unions decided to give way to the employers and started negotiations with them separately, leaving the A.E.U. to fight alone. But these negotiations broke down and on May 2 the members of the other unions were locked out. On May 10, the findings of the Court of Inquiry, which had been set up by the Minister of Labour on April 27 in reponse to repeated requests from the National Joint Council of Labour, were published. Whilst pointing out that the matter was one in which " no agreement however carefully devised can wholly take the place of good sense and goodwill between the parties, and an appreciation by either side of the difficulties and point of view of the other " the Inquiry came down on the side of the employers.[6]

In spite of the weakened unity between the unions concerned and the report of the Court of Inquiry against the men, the ranks of the A.E.U. continued solid. There was general agreement with the Executive Council on its conduct of the dispute and all areas reported well attended branches, daily meetings of the lock-out committees and systematic picketing. Even when told that the finances of the Union were nearly exhausted, there were few desertions and a general willingness to continue the fight. There was little trouble with blacklegs. The unemployed loyally rejected the offers of work from the employers. Those organised in the National Unemployed Workers' Committee Movement, in which many engineers were prominent—it has been said that the shop stewards of the war became the unemployed leaders of the post-war depression—gave considerable assistance in picketing. Efficient lock-out committees, distinct from District Committees, were set up in all areas, elected from amongst the men affected. They took good care of the few handymen who tried to creep into the locked-out shops and did much to maintain morale through a very difficult struggle. Pickets were on the job daily and one area reported that they had to be particularly alert in dealing with several men " who flattered themselves that they are foremen."[7]

But solidarity was insufficient to overcome the almost insuperable difficulties which faced the Union, and for which the unprecedented depression of 1921–22 was responsible. At the start of the lock-out there were aleady 91,773 members unemployed and the lock-out increased this number to 144,079 in April and to 169,410 in May. By June, nearly 90,000 members had been locked out, in addition to those unemployed through bad trade. Since the beginning of 1921, the numbers receiving benefit from Union funds had been a constant and serious drain on the funds. A. H. Smethurst, successor to Tom Mann as General Secretary, had drawn attention in the Financial Report for 1921 to the serious position :

> " Just as an epidemic destroys all actuarial calculations (as to the cost of health or life insurance) so in the same manner did this

> unprecedented slump in the engineering industry cast to the air the carefully prepared basis regarding the amount required per member per week to meet the obligations of the Union respecting payment of unemployment or donation benefit."

During 1921, £2,136,579 had been paid out in unemployment benefit and the resources of the A.E.U., which had totalled £3,250,000 at its formation in July, 1920, were reduced to £2,382,240 by January, 1922. Nor could the situation be met by levies on those in work or increased contributions, for many members were working short-time and could not shoulder these additional burdens. With the lock-out the funds drained away much more rapidly, and at the end of May, 1922, only £32,572 was left in the general fund, and on May 27 the Union was forced to take the desperate step of suspending all benefits except those to sick and superannuated members. Appeals to the trade union movement for loans and gifts to the lock-out fund resulted in only £21,697 being raised by June 2, for the widespread depression and unemployment of 1921–22 and the miners' lock-out had placed a similar strain on the funds of all working-class organisations.

Such a situation restricted the Union's possibilities of action. For instance, instead of being able to call for a general withdrawal of all members unaffected by the lock-out notices, they were forced to restrict the numbers involved. Lack of funds also prevented the Union from putting its case adequately before the public.

The employers on the other hand held all the cards. The time for the lock-out had been carefully chosen and it had little effect on their profits. Mr. Gould, M.P. for Cardiff and a prominent member of the Employers' Federation admitted this in the House of Commons on March 20, nine days after the start of the lock-out:

> "I would like to tell the House exactly what would have happened if this particular lock-out or stoppage had not taken place. The engineering and shipbuilding industries to-day are faced with a practically total cessation of work within the course of the next six or nine months in any event."[8]

This, together with the large army of unemployed, the weaknesses of the Union's finances and the fact that facing one united employers' federation there were forty seven different trade unions, gave the employers full opportunity to press home their advantage both to win the immediate battle and, in the words of a Union pamphlet, to "Attempt to Smash the A.E.U." in the process.[9]

Not only did the employers try every method to divide the unions involved and isolate the strongest of them, the A.E.U., but they also tried coercion against individual members. Pressure was put on A.E.U. foremen to join the Foremen's Mutual Benefit Society and leave the A.E.U. Such men were to be allowed to continue at work provided they "retired from membership of the A.E.U. . . . and produced a membership card of another trade union."[10] There was little doubt among the employers as to which union led the engineers. On May 16 the Manchester District Association of the Federation sent to their member-firms a circular drawing attention to the decision in the Merthyr Tydvil Case of 1900 where Poor Relief had been refused to workers unemployed due to a dispute, and suggested that protests should be made to authorities where relief was being paid to locked-out engineers contrary to the principle behind this decision.[11]

The indifference of the employers to the misery they were causing to thousands of working class families was well described by an Organising District Delegate, who wrote in his monthly report:

> " Herod was a gentleman compared with some of the people whom I know, and whom you will see walking with a Bible under their arm on Sunday, but on Monday rub their hands with satisfaction when they think that some member of the A.E.U. is going to be forced back to work through the weary and care-worn face of his wife and the pleadings of his children."[12]

Not all the firms within the Federation agreed with the tactics of their organisation, and in Birmingham several withdrew their notices and the men returned to work. But the rift in the ranks of the Federation was small. A few firms outside the Federation were even more critical. Austin Hopkinson, M.P. for Moseley, Lancashire, himself an employer of engineering labour, speaking in the House of Commons on March 20, said ironically:

> " It seems to me an absurd thing for the members of the Federation to put forward a claim to exercise managerial function now, because they have already abdicated those functions in times past by joining the Federation."[13]

The strength of the employers and the relative weakness of the unions made defeat almost certain. Nevertheless the solidarity shown by the members prevented a disorganised rout and the smashing of the A.E.U. Following the Court of Inquiry the Executive tried one more month to obtain concessions and on June 2 called a National Conference to discuss the position. On that day the other unions, who had decided that further resistance was useless, went back to work and the National Conference of the A.E.U. decided to put the employers' proposals to a ballot vote of the members. The result was 75,478 in favour of acceptance and 35,453 against. When the result was reported to the employers they withdrew their notices and the lock-out terminated on June 13, 1922, having lasted over thirteen weeks. During this time over 260,000 workers had been involved and 13,650,000 working days lost.

The Settlement and the Sequel

The return to work was followed by the inevitable terms of settlement. Clause I of the 1898 Terms of Settlement and of the revised Terms of Agreement of 1907 was re-stated in different words:

> " The employers have the right to manage their own establishments and the trade unions have the right to exercise their own functions."

But, as in the 1898 agreement, the subsequent clauses defined the rights of trade unions very closely but left managerial rights satisfactorily vague. While wages and working conditions already covered by agreements, and the length of the working week could not be altered without due notice and operation of procedure, in the very wide field of problems outside these issues the employers had powers to alter conditions without special consultation and subject only to ten days notice being given in certain cases. The Agreement then re-stated the provisions for avoiding disputes as set out in the York Memorandum of 1914 and slightly amplified in the Shop Stewards' Agreement of 1919. Finally, on the issue in dispute, it was agreed that the " employers have the right to decide when overtime is necessary."

Following the defeat and weakening of the engineers' unions, the employers were not slow to press home their attack. As late as July the Eastern Counties reported that only 25 per cent. of the members had been re-started, and in other districts, such as Portsmouth, not more than 50 per cent. had returned to work. The employers lost no time, however, in putting into operation their " Managerial Functions." In July notices of changes in workshop practices were posted in Edinburgh and in other cases in that area changes were made without notice. In some instances notices that piece-work prices were to be reduced were posted.[14] But the main attack was resumed on wages. The day after the agreement terminating the lock-out was signed, the employers sent a letter to the unions requesting a conference to discuss a decrease of the war bonus, entailing a reduction of wages by 16s. 6d. a week by the middle of August, 1922. The unions met the employers on July 5 and 7 and made every effort to secure some modification of the demand, but apart from offering to operate the reduction in three parts, the employers refused to move. The proposals were put to a ballot of the members, and in spite of the fact that the engineers were suffering from poverty and distress caused by the lock-out, members of the A.E.U. voted against acceptance of the proposals by 43,551 to 24,531, which, with the votes of members of other unions, gave 70,900 against and only 43,937 in favour. When the employers were told of the result they intimated their intention of proceeding in any case, with the threat that if any stoppage of work occurred they would be free " to consider the advisability of withdrawing their offer and reverting to their original demand."[15] The Executive of the A.E.U. decided that they could not recommend another ballot, and therefore advised their members to remain at work. In effect, this meant accepting the employers' demands.

By the end of 1922 the membership of the Union had fallen to 333,123, a reduction of 126,864 or over 25 per cent. since the amalgamation in 1920. Although the figures of the amalgamated societies were inflated in June, 1920, by the influx into the unions during the post-war boom, the decrease was a serious question both from the point of view of bargaining strength and financial stability. Whilst it was clear that the decrease of membership, which had started before the lock-out, and the heavy unemployment and consequent weakened financial position of the Union were factors in the 1922 defeats, defects in the structure of the organisation also contributed to the failure of the Union to resist the demands of the employers.

In the frank discussions which followed the lock-out all were agreed that the lack of unity among the unions catering for skilled engineers had contributed to the defeat and there were many who felt that the craft outlook of the A.E.U. was a major handicap. The National Committee of October, 1922, which considered a revision of rules, had before it a resolution to make all wage-earners in the engineering and shipbuilding trades eligible for membership, but it was defeated by 31 votes to 11. The only step taken at this stage towards widening the basis of membership was to include the trade of sheet-metal worker, pipe fitter, motor mechanic and pipe bender, and to reduce from two years to three months the time a man must be working in the industry in order to be eligible for Section III of the Union. This latter alteration, though hailed at the time by the Executive as a " most radical step," was a drop in the ocean compared with what the situation demanded. Whilst it enabled semi-skilled men to join the Union almost as soon as they had started in the trade, the numbers actually doing so indicated that the spirit of the alteration had not been accepted widely by the members. Of the 66,904 members admitted to the Union between 1923 and 1926 only 3,246 joined Section III, which catered for these semi-skilled men, at a time when it was estimated that at least 30 per cent. of the workers in engineering fell outside the recognised skilled category.

The chief efforts after 1922 to reconstruct the Union were directed towards reclaiming the members lost through the lock-out and towards extending the scope of the amalgamation. Penalties imposed on members who returned to work during the lock-out were relaxed and members readmitted, and those who had dropped out through arrears were taken back under favourable terms. In some districts, committees were formed with the express purpose of approaching members who had left the ranks of the Union and persuading them to return.

The A.E.U., though it had particular trouble due to the lock-out was not alone in finding difficulty in keeping its members. The failure of the trade unions to act vigorously as a co-ordinated movement once the attack by the employers had started led to a widespread disillusionment. The Trades Union Congress attempted to counter this feeling with the " Back to the Union " campaign but it did not halt the decline. In 1924 the membership of the unions affiliated to the T.U.C. had fallen to under four and a half millions compared with six and a half in 1920, and in the A.E.U., although 10,000 members were reinstated under the special terms following the lock-out, the membership had fallen to 252,776 by 1924.

The efforts to broaden the amalgamation met with little success. In October, 1922, the Executive Council approached the Foundry Workers, the Boilermakers, Shipwrights and others, but made little headway. It therefore went to the General Council of the T.U.C., requesting them to take steps to bring about an amalgamation of all unions in engineering and shipbuilding, and in February, 1923, a conference of unions in the metal trades was convened. Twenty eight unions accepted the invitation, but several important unions, including the Boilermakers' and Shipwrights', did not respond. At the conference a resolution was passed in very general terms in favour of amalgamation and a sub-committee established to work out a scheme whereby all the unions in the metal trades could unite in one or two organisations. The sub-committee finally submitted proposals for dividing the unions into four groups covering general engineering, iron founding, brass work, and sheet-metal and tin-plate work; but already the idea was receiving setbacks, for at a meeting held in June, 1923, it was reported that many of the unions which had attended the original conference had decided that they were unable to take further action in the matter. Consequently the matter was dropped and not raised again until the National Committee meeting in 1925, which passed the following resolution:

> "That in the opinion of the National Committee the necessity of amalgamation of unions in the engineering industry is long overdue and request district committees to get in touch with members and officers of other unions with a view to speeding up the various Executive Committees."

Once again the Union was realising that if wider amalgamation was to be achieved the support of the rank and file in the workshops and branches and of the local officials was as important as the negotiations between executives.

Parliamentary Action and the Industrial Alliance

The defeats suffered by the entire working class in the 1921–22 depression, while they materially weakened the financial strength of the trade unions and reduced their membership, did not succeed in breaking the spirit of the movement. The fact that the individual unions had been unsuccessful when they tackled the employers alone led to the search for other methods of strengthening their organisation. The apparent failure of industrial action encouraged the belief that the working class could not beat the employing class until it had obtained a majority in Parliament.

The engineers, in common with other trade unions, began to place greater emphasis on winning seats for Labour in the House of Commons. At the first National Committee meeting in December, 1920, J. T. Brownlie had expressed the opinion that:

> "Our organisation will play a prominent part in the labour movement nationally and internationally, and I believe that it is in the best interests of our members that the Society should be identified with and take a prominent part in all national and international labour movements, political and industrial."

But it was not until the defeat in the lock-out of 1922 that an increase in the Union's Parliamentary representation and in the strength of the Labour Party was seen as a necessity if defeats on the industrial field were to be avoided. In October, 1922, the Executive Committee issued a letter to all branches urging them to support the Labour Party and vote against the Government in the coming General Election. The defeat in the lock-out was due, the letter stated, to "superior power of the employers, the hostility of the coalition-ridden House of Commons and was in part due also to the numbers of the Labour Party in Parliament."[16] At this Election, seven of the fifteen candidates put forward by the Union were elected and at the General Election of the following year, two of these held their seats and five others were elected, who, together with several other A.E.U. members put up by constituencies, came together to form a group within the House of Commons. In the Election of 1924, when the Labour Party took office for the first time, four Union representatives were returned, Robert Young for Newton, Lancashire, David Kirkwood for Dumbarton, F. A. Broad for Edmonton, and F. H. Rose for Aberdeen North. The position of Members of Parliament in relation to the Executive Council and to the Labour Party was defined in an article by F. H. Rose, the Secretary of the group. He said:

> " While our connection with the Executive Council in no way prejudices our attitude to the Labour Party . . . it is generally agreed that upon many matters there may arise circumstances which provoke problems which only engineers can effectively deal with."[17]

And as these successes were being achieved on the Parliamentary front, the workers were recovering from the defeats of 1921–22, and in every industry were resisting further encroachments on wages and working conditions and chafing against the conditions imposed on them in the years of depression. But at the same time, they were determined not to fight their future battles in isolation. The defeat of the miners in 1921 was attributed to the failure of the Triple Alliance of miners, transport workers and railwaymen to take action, and the defeat of the engineers in the following year to the disunity between the various unions in the industry and their general isolation from the rest of the trade union movement.

In 1924 the first suggestion for the formation of an Industrial Alliance of all workers in key industries was put forward in a resolution passed at the National Committee of the A.E.U. Action on the resolution was slow, but in the following year the miners suggested a Quadruple Alliance of transport workers, railwaymen, engineers and miners, and a meeting was called on June 4 at the St. Pancras Hotel. Three federations and eight unions, including the A.E.U., were present to discuss the formation of an alliance of the key unions in the country. But before the many problems involved in creating a united fighting alliance had been overcome a crisis in the mining industry intervened. On June 30, 1925, the coalowners gave notice of the termination of the existing wage agreement in the industry and the imposition of savage wage cuts and extension of hours. The Industrial Alliance was formed too late to accept the challenge but the spirit engendered in the discussions led the General Council of the T.U.C., in answer to the appeal of the miners, to prepare for the first time in its history a united defence for one section of the workers. A call went out to all transport, railway and dock workers engaged in handling coal to cease work on July 31 in support of the miners. This display of solidarity achieved a signal victory, for the Prime Minister, Mr. Baldwin, immediately announced that the Government would set up a Royal Commission to enquire into conditions in the industry and would subsidise the industry to enable wages to remain at their existing level for the following nine months. July 31, 1925, has since become known as " Red Friday " in the annals of the British Labour Movement. The victory put new heart and confidence into the workers, and A. B. Swales, of the Executive Council of the A.E.U., Chairman of the T.U.C., proclaimed in a historic speech at the Scarborough Congress:

> " All around us are signs of awakening consciousness in the people of all countries that the present system of society is condemned . . . . It is the duty of all members of the working class to so solidify their movements, that come when the time may for the last final struggle, we shall be wanting in neither machinery nor men, to move forward to the destruction of wage slaves and the construction of a system of society based upon co-ordinated effort and world-wide mutual goodwill and understanding."

Among engineering workers whose conditions had suffered perhaps more severely than any other section, the rapidly increasing unrest was taking the form of opposition to the York Memorandum. Particular anger was felt at the way in which this agreement had been used by the employers to postpone, time and again, discussion of the wage claim for a 20s. a week rise first put forward by the unions in April, 1924. In only one important instance, however, was there open revolt. This occurred at the beginning of 1926 at Messrs. Hoe & Co., printing machine manufacturers, London. At this firm the workers were well organised in trade unions and for some years there had been battles with the employers on conditions of work and wages. In November, 1925, a refusal of a wage increase led the unions to place an embargo on overtime working, and according to the management the shop stewards posted a notice reading " The Order of the Day is GO SLOW." The climax came on January 11, 1926, when, following the refusal of the firm to sack non-unionists who had been started closely on the heels of some dismissed trade unionists, the day-shift began a stay-in strike. The night-shift followed suit and the firm then locked out 900 men. The matter was referred to the Employers' Federation and a national lock-out was threatened for March 15 unless the Executives of the unions concerned ordered the men back to work.

The Executive was in a difficult position. They knew that the men at Hoe's were morally right if technically wrong, but since the employers were accusing the men of violating the Provisions for Avoiding Disputes and were using this excuse to hold up discussion of the unions' claim for a 20s. national increase, they decided to order the men to return to work. They also felt that the Union was not yet strong enough to meet the threat of a national lock-out by the employers, although it was clear that the latter were using the York Memorandum to prevent the Union members in any individual firm from improving wages or conditions. The men, on the other hand, while they acknowledged the difficult position in which the Executive

Council was placed, nevertheless maintained that their own position was so strong that they could win the day if the Executive did not intervene. They believed that the time had come to challenge the employers and claimed that the action which they had already taken had put new life and hope into the members and had already resulted in an unprecedented recruitment to the Union. They consequently refused to obey the instructions of the Executive, which were confirmed by a special meeting of the National Committee, to return to work. The strike continued and conference after conference took place between the strike committee, the London District Committee and the Executive in an attempt to reconcile the points of view. Finally, on March 18, a few hours before the lock-out notices were due to operate the strike committee decided to recommend a return to work. A lock-out had been narrowly averted.

The General Strike

Less than two months later, the engineers, together with every other section of the trade union movement, were involved in the General Strike. On May 1 the temporary arrangements in the mining industry had come to an end, and the miners successfully appealed to the General Council of the T.U.C. to support them in their refusal to accept the demands made by the coalowners. The General Council on May 3 after the breakdown of negotiations with the Government issued a call to the transport and railway workers, together with those in iron and steel, printing and heavy chemicals, to cease work in support of the miners. The engineers, since they could not directly paralyse industry, were regarded as second-line troops and were not called upon to strike except in those instances where they worked beside others who had been withdrawn, as, for instance, in the railway shops, the collieries and in transport maintenance.

The result of such an instruction was to create confusion among the engineers as to who was to come out and who was to stay in. Many members were engaged on motor-car manufacture and vehicle building which was not clearly defined in relation to the instructions for transport workers. Some districts consequently interpreted motor-car manufacture as "Transport," whilst others did not. Coventry settled the confusion in their area by calling out all motor-car workers, and the Wolverhampton Strike Committee very quickly agreed upon a policy which brought the motor-car industry in that area to a complete standstill.[18] Reports showed that many other engineers had not waited to do their share of the fighting. Groups of skilled engineers had been formed in many areas to service the cars used to maintain workers' communications and a report from Coventry shows the engineers taking a leading part in the battle in that area.

> "Anticipating a crisis in the engineering industry . . . a specially convened meeting took place on 22nd April, 1926, of organisations concerned, and agreed that the Executive Council of the Trades Council, together with specially co-opted persons from different unions, should be a Council of Action should a crisis arise.

> Hence at the call of the General Council . . . (it) immediately functioned and co-opted 30 representatives from different unions—not necessarily involved directly. A Council of Action of about 50 was thus formed rapidly ; it did not become unwieldly but proved a very live body. . . ."[19]

When the call to the engineers was issued on May 11 the *British Worker*—news-sheet of the T.U.C.—reported that " the engineers waited for the instructions impatiently and all over the country they received their marching orders with enthusiasm and a sense of relief " but before these instructions had been received in all parts of the country—about 50 per cent. of the engineers had left work[20]—came the news on May 12 that the General Council of the T.U.C. had interviewed the Prime Minister and called off the strike. This news was received at first with incredulity by the strikers, for never had their ranks been more solid nor victory seemed so close. But when the news was confirmed and it was learnt that the General Council had called off the strike unconditionally, although it was clear that the miners were determined to continue the struggle, this incredulity gave way to anger and resentment.

To some the return seemed like the end of an unnecessary incident. J. T. Brownlie, speaking as President of the Union at a Special Conference called by the T.U.C. in January, 1927, declared " I am not in favour of a General Strike in trade union matters. I recognised that a General Strike on behalf of the miners or anyone else was doomed to failure from the beginning."[21] But this was hardly the spirit of the resolution proposing an " Industrial Alliance " or of the members who loyally carried out the decisions of the Executive, and there were many in the ranks of the Union who felt that the miners had been badly let down and the chance of victory thrown away. The resolution of the London District Committee on May 15 condemning the return to work and urging the continuation of the strike echoed the feeling of many engineers and was paralleled by similar resolutions in other unions. But the decision to return could not be reversed and the efforts of the unions were turned to raising finance for the miners who were struggling on alone.

The first general strike had failed. The engineers, from the nature of their work, had played a secondary role both in the discussions of tactics and policy and in the strike itself. The leadership rested with those unions which could immediately paralyse the industrial life of the country. But the engineers suffered along with the whole trade union movement in the disillusionment which followed this failure and from the restrictions imposed by the repressive Trade Disputes Act introduced by the Conservatives in 1927. Throughout the trade union movement there was a division of opinion among the members as to the policy and methods to be adopted in the future and criticism of those used in the past, and not least among engineers. Jack Tanner, speaking in the name of the rank and file at the T.U.C. in 1926, demanded to know the whole truth regarding the return to work and criticised the General Council for not making full use of the weapons at its disposal. The feelings of the rank and file as to the possibilities of the General Strike were a far cry from the opinions of J. T. Brownlie, the National President. The search for a policy began once more.

ENGINEERS
LOCK-OUT.
THE REAL ISSUE.
"must I work overtime whilst my mate and his family starve for want of work"?
J.O.N.

Cartoon from the A.E.U. Monthly Journal, 1922.

CHAPTER X

The Engineers in the Depression and Recovery: 1926–1939

Between the General Strike in 1926 and the outbreak of war in 1939 the history of the British working-class movement and with it the history of the engineers falls roughly into three phases. The recovery of industry in the late 'twenties, rising to a boom in 1928 and 1929, found the trade unions engaged in efforts to build up their strength in order to win back from the employers all that they had been forced to concede during the years of post-war depression and the General Strike. Demands for wage increases and improved conditions were linked with the struggle to secure the return of a Labour Government, a struggle which was successful in the autumn of 1929. But the workers were on the defensive again in 1931. The rapid collapse of the boom, starting in America in 1929 and spreading to every capitalist country in the world, culminated in the crisis of 1931–33, the most severe through which capitalism had ever passed, and with it came all-round attacks on wages and conditions. Recovery was achieved at tremendous cost. In Germany, capitalism was only able to re-establish itself by introducing the Nazi system, which sought to solve the crisis by the destruction of the working-class movement, territorial expansion and the enslavement of other nations. In Britain, the Labour Government was replaced by the so-called National Government. Industrial recovery based largely on rearmament was slow and still left an army of over a million potential wage-earners and producers unemployed. The labour movement again rallied, and began to press for wage increases, for better conditions in industry, and for adequate support for those who found themselves unemployed through no fault of their own. At the same time, it attempted to check the trend to war by demanding effective measures to prevent Fascist aggression.

The partial recovery of the engineering industry between 1925 and 1929 gave the A.E.U. the opportunity of tackling the problems facing it as a result of the defeats of the early 'twenties. Efforts were made to strengthen organisation, overhaul the machinery of negotiation and restore the wage cuts imposed in 1921 and 1922. The 1926 Rules Revision meeting had before it a proposal to open the ranks of the Union to all male workers in the engineering industry. It was not the first time that such a proposal had been considered, but the widening use of new techniques of production which employed a larger proportion of less skilled labour, and the clear evidence in the struggles of the early 'twenties that a union of skilled men alone was not strong enough to stand up to the employers, had changed the outlook of the engineers, and to many the proposal before the Rules Revision meeting seemed long overdue.

The proposal was adopted and by the creation of two new sections of membership, V and Va, entry was open to all male workers in the industry whatever their job, skill or experience. These sections carried lower contributions and fewer benefits but entrants had full voting rights.

The decision was a momentous one with far-reaching implications but for two reasons its immediate effect was almost negligible. In the first place the drift away from trade unions which followed the defeats of 1921–22 continued after the failure of the General Strike, and engineering was no exception. Secondly, not all the members were convinced as to the wisdom of the step, and in spite of efforts by the Executive Council and officials and the publication of explanatory and propaganda material, the spirit of the change was slow in becoming universal. Prejudice based on a craft outlook died hard, and in 1927 the Executive Council was obliged to issue a statement to branch secretaries, informing them that they were not in order in refusing to accept members for Sections V and Va.[1]

At the same time as the Union was extending its base downwards to include the unskilled worker, it made further efforts to consolidate the organisation of craft workers by amalgamation, and through co-operation with other unions. In addition to joint action with the Federation and other kindred unions in the Engineering Joint Trades Movement, the Union continued its working agreements with the railway, transport and miners' unions, and was a party to the agreement which established negotiating machinery for railway shopmen. In 1928 a new approach to the question of amalgamation was made, when the Union brought a proposal before the T.U.C. for the reorganisation of the trade union movement on the basis of one union for each industry, on the grounds that " hazardous and sporadic amalgamations may only intensify the existing chaos."[2] After a great deal of discussion, in which opposition was voiced strongly, the resolution was passed but no successful action resulted.

Wage Demands and the Engineers' Charter

Once the necessary constitutional changes were made the Union turned to the task of improving wages and conditions. Inevitably the question arose as to what methods were to be used. The fact that the membership was still declining and that unemployment among engineers was still heavy caused the Executive Council to shun strike action as a method of enforcing their claims. Among the rank and file there were misgivings on the policy of repeatedly accepting the partial offers made by the employers to every claim put forward, and much dissatisfaction with the Provisions for Avoiding Disputes, which enabled managements to introduce changes in working conditions with comparative ease, whereas claims by the Union for improvements could be side-tracked into almost endless discussions. But the National Committee, faced as it was with the continually declining membership, turned down proposals for strike action or " sanctions " in the form of an embargo on overtime, and supported the methods adopted by the Executive Council.

The protracted negotiations for a 20s. increase begun in 1924 came to a close in 1927 with little achieved. Because of the failure to make headway the Engineering Joint Trades·Movement decided to break off negotiations for a national increase and informed their districts that they were free to make local demands on wages. This method proved no more successful in gaining a wage increase, but it had the effect of causing the employers to ask for a reopening of the national negotiations. The employers then offered a 2s. increase to plain time-workers, an offer which was accepted by a two-to-one majority of the combined ballot vote of the membership of the various unions. No one was satisfied with the result but the majority was agreed that it represented the best which could be obtained by negotiation.

In January, 1928, the Engineering Joint Trades Movement met to reconsider its wages policy. In view of the difficulties which had arisen over district applications being made at the same time as the national claim for a 20s. advance was being negotiated, the Conference had first to make up its mind as to the relative advantages of local and national applications. They eventually agreed on the latter and decided to put forward an immediate demand for an 8s. increase for plain time-workers with corresponding increases in piece-work prices.

The demand was met by a flat refusal. Sir Allan Smith, the employers' spokesman, claimed that the poor state of the industry would not permit any increase, and chided the unions on the apparent paucity of reason for the amount claimed and for their ill choice of time. He suggested that the fact that only three union representatives spoke in support of the claim was evidence of the weakness of their case. In a bitter reply to Sir Allan, J. T. Brownlie laid bare the reason why the employers were in a position to resist the demands of the men. Claiming that it was not the inability of the industry to pay that prompted the employers refusal, and looking back on fifteen years as spokesman of the engineers he said:

> "I have sufficient experience of these negotiations to teach me this, amongst other things; that, notwithstanding the justice or efficacy of our case, notwithstanding the eloquence in which we state our case, or the cogency of our argument, a decision does not rest on the power of speech of those who address you on the question of increase in wages. It is a matter of power, and if power rested with us we would probably not put up three speakers. We would probably give you to understand in very trite, terse and definite terms what our demand was, and we should expect that would be observed and conceded. However, we are not as powerful as we hope to be; one day, we will be powerful and will control matters in a manner that will be beneficial not only to those who are engaged directly in the industry but will be beneficial to all members of the community."[3]

In the face of the employers refusal the Joint Trades Movement set up a small committee to investigate the prosperity of the various sections of the engineering industry and to examine the trade union organisation. But the enquiry proved useless as an aid to wage negotiations, which dragged on to April, 1930, when the Engineering Joint Trades Movement suggested that their claim should be submitted to arbitration. The employers refused and the unions asked the Labour Government to set up an Enquiry into the industry along the lines of the investigation into the cotton and steel industries then being undertaken. But the Government would not agree, and with the onset of the depression wage demands by the unions were held in abeyance.

With this experience of blank refusals from the employers, in times of better trade, to return any of the 32s. reduction enforced before and immediately after the 1922 lock-out, leaving the engineer one of the lowest paid craftsman in the country, it was not surprising that ideas of " industrial peace " and collaboration between unions and employers received no support from the engineers. The discussions between the General Council of the T.U.C. and a group of industrialists led by Alfred Mond—known as the Mond-Turner talks—were strongly opposed by the A.E.U. On the General Council itself, A. B. Swales, representing the A.E.U., fought against the decision to participate and J. T. Brownlie at the T.U.C. in 1928 trounced the General Council for discussing industrial matters which affected the future of the trade union movement with a group of employers who represented " nobody but themselves."[4] At the T.U.C. in the following year he headed the demand that the discussions should cease since " they were calculated to hamper and obstruct the development of this great movement,"[5] and in 1930 the Union seconded a resolution moved by the National Amalgamated Furnishing Trades Association, which called on the T.U.C. to declare its :

> " opposition to the false cry of industrial peace and to the policy of collaboration with the enemies of labour, who are vigorously and ruthlessly attacking the standard of living of the working class at the very time they are conferring with the General Council, and instructs the Council to put an end to such conferences forthwith, as they are a serious menace to the interests of the working-class movement."

The engineers knew that failure to secure wage demands was not due to lack of round table conferences with the employers or to the weakness of their case but to the steady decline in membership and the disillusionment which had followed the General Strike. In an attempt to stem the decline and to provide a rallying point for the membership, the National Committee of 1929 adopted an " Engineers' Charter." This called for

(1) £4 a week as a national minimum wage.
(2) The establishment of a 44-hour week.
(3) The abolition of systematic overtime.
(4) Shop stewards in every shop and a factory committee in every factory.
(5) The Union's right to control the numbers and conditions of employment of youths and apprentices.

(6) Payment for all Statutory Holidays.
(7) Payment for periods of sickness after 12 months' service in one firm.
(8) Every metal worker a Trade Unionist.

This Charter, pointing the way forward on all aspects of Union policy, was greeted with enthusiasm by the members. At the same time the whole labour movement was recovering from the after-effects of the General Strike and claims were being made and small advances won. In spite of the Trade Disputes Act, introduced by the Conservative Government, which had aimed at crippling the political influence of the trade union movement by replacing contracting-out of obligations to pay the political levy with voluntary contracting-in, all unions played a powerful part in the victory of the Labour Party in the General Election of the autumn of 1929. With the formation of the Labour Government hopes ran high.

The Crisis of 1931

Before the trade unions, including the engineers, had time to retrieve the post-war cuts in wages or the Labour Government to demonstrate its ability to cope with the vast programme of social legislation which it had set itself, the country was plunged in the worst depression ever experienced. The financial crash on Wall Street in October, 1929, was the starting point of a world economic crisis without precedent. In Britain, unemployment rose abruptly during 1930 and the climax was reached in 1931, when the Tory press demanded the end of the Labour Government, and called for tremendous sacrifices from the workers in order to save industry and preserve the Gold Standard—the two measures which were the employers' solution to the crisis. In August, 1931, Ramsay McDonald led a few of his Labour colleagues into the " National " Government, which, though nominally under his leadership, was composed primarily of Tories. In the following month, unemployment figures rose to the astronomical figure of 2,900,000 and did not decline appreciably until the latter months of 1933.

In this crisis the A.E.U., in common with all other working-class organisations, found themselves on the defensive. With increasing numbers of their members out of work, a severe drain upon their funds began. The claim that members of the Union either " paid in " or " were paid out "—the principle that members on benefit were exempt from contributions—had to be abrogated, and a recalled Rules Revision Meeting in 1931 made the payment of a proportion of contributions obligatory to all those who claimed benefits. The heavy unemployment and distress between 1920 and 1930 had been a severe drain on the finances of the Union and the sharp increase of members on benefit during the depression made such a step imperative. The number of those on superannuation had risen, with the difficulty of older men getting jobs, from an average of 5,552 per month in 1920 to 11,780 per month in 1930, those on unemployment benefit from 10,746 to 25,738, while those on sick benefit had remained fairly stable at about

5,000. Steps were also taken at the 1931 meeting to give the Executive Council power to transfer from the Superannuation Reserve Fund to the General Fund an amount equal to one third of the annual cost of superannuation until such time as the General Fund was in a position to meet a greater proportion of the cost. It was not until 1937 that the principle that those on benefit were exempt from contribution was re-established.

The attack by the engineering employers on working conditions started in June, 1931. The Employers' Federation requested the Executive Council, together with representatives of the other unions in the Engineering Joint Trades Movement, to meet them in conference to consider proposals for the alteration of working conditions, on the grounds that the industry was in a grave position and that immediate adjustments must be made if the employers were to refrain from considering wage reductions. The employers claimed that throughout the depression they had carried a heavy financial burden and called upon the unions to make their contribution to the solution of the crisis. The proposals which they put forward amounted to the wholesale slashing of working conditions, including an increase in hours from 47 to 48, reductions in overtime and night-shift rates and in piece-work prices. In the course of the negotiations the unions proved conclusively that the employers had exaggerated the picture of the poverty of the industry and pointed out that the engineering industry in other countries was suffering equally, thus taking the sting out of the employers' argument—that hardy annual of foreign competition. But arguments on profits and prices proved useless. All that could be wrested from the employers was agreement to leave the 47-hour week intact. The employers threatened to impose their conditions on July 6, 1931, if the unions by that time had not come to an agreement with them. Consequently, the Executive Council, without submitting the proposals to the membership, decided to sign an agreement which, while safeguarding the 47-hour week, reduced overtime rates from time and a half to time and a quarter and the hourly night-shift rates from time and a third to time and a sixth, and cut the basis of piece-work prices from 33 per cent. over time rates to 25 per cent., with proportionate reductions in existing piece-work prices.

The Executive was severely criticised for agreeing to such radical changes in working conditions, wherein practically all the gains of the past twenty years were lost at one blow, without even consulting the members. Most active in their criticism were members of the National Minority Movement, a rank-and-file organisation covering the main industries, which had been formed in 1924 to urge a more militant outlook and policy for the trade union movement. A number of the members of this movement were expelled from the Union for the unorthodox methods they used in criticising the acceptance by the Executive Council of the wholesale cuts. But that this opposition was not wholly out of tune with the feeling of the members was indicated by the decision of the Final Appeal Court in 1932 to reinstate them on payment of a fine. There is little doubt that had the lead been given the membership would have been prepared to face the hardships involved in strike action, but the Executive Council would not risk a major dispute, which they considered could not possibly be carried through to a successful conclusion in view of the widespread unemployment, the declining membership and the strain upon the funds. Nor was the Labour Movement, disorganised by the secession of many of its leaders to the National Government, able or willing to call for united action against the widespread cutting of wages and worsening of conditions.

The Executive Council had no illusions as to the danger of accepting the conditions imposed by the employers, allegedly as temporary measures to tide over the depression. At the National Committee meeting in 1931, W. H. Hutchinson, who had been elected Pesident on the retirement of J. T. Brownlie in 1930, declared in his opening address that the employers:

> ". . . hope to stabilise our hours, our wages and working conditions at the bottom of the slump. They hope to impose on all engineering workers a standard of living based on the lack of prosperity to-day of some sections of the engineering trade; and they want to keep on that new low standard when all sections of the trade are flourishing again. It is an intelligent plan, so intelligent that I can only believe that the banks have done the employers' thinking."

Whoever did their thinking for them the employers succeeded in imposing their conditions upon the engineers. But the sacrifices made by the workers did not bring any immediate alleviation of the depression. Unemployment among A.E.U. members until December, 1932, remained as high as 25 per cent. and membership continued to fall until it reached its lowest level of 190,695 in August, 1933.

The Beginning of Recovery

In the last months of 1933 the process of gradual recovery began. The numbers of unemployed slowly declined, although they remained in the following five years over the million mark. In the engineering industry, recovery was largely conditioned by preparations for war. From 1935, more and more members of the A.E.U. were absorbed into the munitions industry, and along with the drop in the number of unemployed came a steady increase in recruitment to the Union.

In 1934 the constitutional changes made in 1926 began to bear fruit. During the year, 15,106 members were admitted to Sections V and Va against an average of 5,700 in each of the previous five years, and in 1939, 51,247 were admitted to these sections. Other sections also began to increase and by September, 1939, the total membership of the Union had risen to 390,873, an increase of some 200,000 in six years. An indication of the growing strength of the Union was the increase in the number of shop stewards. While the exact numbers are not known, the increase was indicated by the fact that the average payment to stewards for the four years 1935–38 was nearly three times as great as for the preceding four years.

The A.E.U. with its funds and membership on the increase was once more in a position to resume the offensive. From 1934 they began to use their growing strength to demand the restoration of the 1931 cuts, increases in wages, improved conditions in the industry and amendments to the negotiating machinery. The National Committee in 1934 instructed the Executive Council to make an immediate claim, along with other unions, for a 2*d*. an hour increase and to take the necessary steps for an immediate restoration of the 1931 cuts in overtime and night-shift rates. Despite the strong case put forward by the National President, Jack Little, spokesman for the twenty seven unions who jointly made the claim, the employers offered only a partial settlement. They refused to restore the 1931 cuts and offered only an increase of 2s. a week on the national bonus to operate in two equal instalments. The Engineering Joint Trades Movement decided to accept the offer and in October, 1935, made another claim for the remainder of the 2*d*. per hour—1½*d*. increase—and reiterated their demand for the restoration of the 1931 cuts. On this occasion the employers offered another 3s. on the national bonus, and a small adjustment of night-shift rates, which Executives of the unions concerned again accepted. While considerable criticism was voiced at the National Committee meeting in 1936 against the policy of accepting the partial offers made by the employers in settlement of the Union's more far-reaching demands, a proposal to take a ballot vote for strike action to enforce the full demands was defeated. As soon as the " stabilising " period, during which the unions agreed to make no further claims, was ended, the Engineering Joint Trades Movement went forward with another application for a 2*d*. an hour increase, the restoration of the 1931 cuts and the consolidation of the National bonus on to the basic rate, and at the same time requested a conference to discuss improvements in the existing Overtime and Night Shift Agreement. After three months of negotiation the offer in 1937 of the employers of 3s. on the bonus, and an increase in overtime rates on day shift from time and a quarter to time and a third for the first two hours, was accepted. It was also agreed that local wage applications should only be discussed where wages were deemed exceptionally low, and a Joint Committee was established to explore the possibilities of consolidating the national bonuses on to the basic rate.

The greatest victory of this settlement, however, was the offer by the employers to grant payment for holidays, which meant that they broke away from the principle which they had hitherto rigidly upheld of " paying only for work done." Ever since 1924 the Union had been pressing the employers to concede this principle but had made little headway. The fact that the Government had set up a Departmental Committee to investigate the question doubtless influenced the employers in granting the concession at this particular moment, but they must have realised that the engineers would take advantage of their growing strength to press for a demand which had been included in their policy for so many years. The decision of the engineering employers did much to speed up the granting of holidays with pay to many workers in other industries.

In September, 1938, the A.E.U., this time in conjunction with the National Union of Foundry Workers alone, approached the employers with a claim for a substantial increase in wages and the restoration of the 1931 cuts. The Federation refused to concede an increase, but by this time the Union was strong enough to brush aside a flat refusal and to press its case. In May, 1939, the employers offered a 2s. increase on the national bonus. The offer was put to the National Committee who decided to accept it but registered their disgust with the meagre amount. At the same time they instructed the Executive to go ahead immediately for a further 10s. increase, and in the event of an unsatisfactory reply, to recall the National Committee with a view to considering steps to enforce the demand. The employers however refused to consider the claim until the "stabilising" period of six months following their previous concession had expired, and by this time the war had intervened.

The successes in increasing wages, partial though they were, answered to a certain extent the criticisms which had been voiced in the Union against the methods of negotiation, and established the superiority of national as against local applications. For although the actual methods of negotiations were important, and a ballot vote of the members in 1934 had decided to press for the amendment of the Provisions for Avoiding Disputes Agreement, it was increasingly clear that the successes which the Union could record in improving wages and conditions were based on its growing membership, its ability to speak for larger numbers of the engineering workers irrespective of skill, and on the strength of its organisation.

The 40-hour Week and the Apprentices

Alongside the negotiations for wage increases went the fight for better working conditions. During the 1931 crisis the Engineers' Charter had fallen into the background, but in 1933 a vigorous campaign around its clauses was launched together with a drive for recruitment. The campaign on the Charter marked the beginnings of a unified approach to questions of establishing minimum wages and conditions for all workers in the industry. While practically all the points of the Charter were the subject of negotiation with the employers, it was on three of its demands—the 40-hour week, holidays with pay, and apprentices—that the most widespread enthusiasm was evoked and the most far-reaching gains achieved.

The claim for a 40-hour week with no reduction in wages was approached in a manner different from previous claims for a reduction in hours. Claims in the past had been on the grounds that a shorter working week would reduce unemployment. The demand in 1933 was made on the grounds of the worker's right to a share in the fruits of increased technical efficiency. J. C. Little, in presenting the case for the Union, stated:

"Our claim for a 40-hour week is based on something quite

> distinct from unemployment. It is not based on the claim that 47 hours is the chief cause of unemployment or that the institution of the 40-hour week would completely eliminate unemployment. Our case is based on the broad social grounds that industrial technique and productivity have progressed with great rapidity and have now reached such a point that a shorter working week without reduction in wages is urgently necessary."

This argument was backed up by illustrations of the effect of technical progress on production. One case given was the successive reductions over 50 years in the time taken to machine an engine-bearing bolt of the same dimensions and material. The times taken were as follows:

1880	115·5 minutes	1910	15·5 minutes
1890	98·2 „	1920	12·0 „
1900	28·0 „	1930	7·7 „

Another illustration used was the increase by the Leyland Motor works of their car-chassis output from 50 to 80 a week following the use of "Widia" tipped tools without increasing the numbers employed.[6]

The campaign for the 40-hour week was organised with the co-operation of practically all the unions in the engineering trades and a committee of seven was appointed to arrange meetings and propaganda in all engineering towns. At the same time, A. B. Swales, for the Executive, was one of the workers' representatives at the International Labour Office meeting in Geneva which was discussing international hours of labour, and he argued strongly against the representatives of the British Government and employers who opposed the adoption of a 40-hour week.

The campaign gained wide support through meetings held up and down the country, sometimes under the auspices of the Trades Councils and sometimes under those of the A.E.U. District Committees. It was responsible for widespread recruitment to the unions, and while the engineering employers refused to concede the demand, the movement spread to the entire trade union movement, and became the official policy of the Trade Union Congress.

In 1937 the engineers won a battle they had been fighting for over 40 years on the apprenticeship question. In earlier years, the Union's demand had been for the limitation of apprentices, but it now included the demand to negotiate on wages and conditions for this section of workers. The employers had always maintained that they held a special responsibility for apprentices and that during their training no outside interference with their wages or conditions could be tolerated. The Union claimed that since apprentices worked alongside its members and relied on them for the practical side of their training, and because the problems of adult and junior workers were closely related, it should be allowed to negotiate for all workers, including apprentices.

When the question was put to the employers in 1936, they refused even to discuss the matter, but after insistence by the Union a conference was called early in 1937 and negotiations continued intermittently throughout the year. In the meantime, the apprentices had taken matters into their own hands and were striking for their demands all over the country. Starting on the Clyde in March, the movement spread to Lancashire, Yorkshire, Coventry, London, and other industrial centres in September and October—in all involving nearly 32,000 lads—and had the effect of forcing the employers to ask for a re-opening of the negotiations which had broken down. At the end of December, the Union was able to secure an agreement which gave it the right to negotiate for apprentices, boys and youths, and which set up special machinery to give effect to the decision. Apprentices serving under indentures or written agreements between their parents and the employer were not covered by the agreement, but the Federation undertook to recommend to its members that such apprentices should be placed in a not less favourable position than those covered by the agreement. It was agreed that the wages of "junior male workers" were to fluctuate on a national basis at the same time as, and in a fixed proportion to, those of adults. The machinery which was set up to deal with disputes was similar, with certain exceptions, to that already in existence for adult workers.

The importance of the victory and the part played by the apprentices and the Glasgow engineers, 30,000 of whom struck work on April 16 in support of the apprentices' demands, were stressed by the President in his address to the National Committee in 1938.

> "I am not unmindful of the part that Glasgow played in this accomplishment. I believe that had that demonstration not taken place, we would have been exactly where we were in connection with this matter. This is an achievement which I regard as an epic in the history of trade unionism. . . . Apprentices, boys and youths, for the first time in our very long experience, are . . . effectively linked with the workmen inside the factory. This invests a union with a great power indeed, the wise use of which will enable us to play a very important part in the training and education of these young men and fit them to maintain the traditions of our craft, together with the traditions of our own organisation."

The Machine Question

The gains on wage demands, holidays with pay, and the right to negotiate for apprentices were not matched on the other main subject of negotiation and discussion with the employers—the machine question.

The problem was not a new one. From the end of the 18th century changing technique in the industry had confronted the engineers with the problem of how to make full use of the machines and processes and at the same time prevent them from being used to undermine their standards and conditions. With the introduction of machines such as the capstan, miller and grinder at the beginning of the 20th century, the problem had become continuous and had increased in magnitude. The dilution introduced in the war of 1914–18 intensified the problem, and although most of the dilutees were withdrawn in the immediate post-war years, the new methods of sub-division and organisation of production and the use of single and special purpose machines which had been encouraged by the large standardised war-time demand, had continued. Particularly was this so in the light-engineering sections catering directly for the consumer.

In 1920 the A.S.E. had met the employers in an attempt to bring order into the machine question. With the accepted rates for turners as a starting point, the Union proposed that all machines should be classified in relation to the centre lathe, and that the workers on these machines should receive the same rate as the turner in certain cases, and a slightly lower rate in others. The employers rejected these proposals and clung to the terms which they had dictated in 1898, which stated that " they shall have the right to select, train and employ those whom they considered best adapted to the various operations . . . and will pay them according to their ability as workmen."

The absence of any effective organisation among the " machinemen " added to the difficulty of securing agreement. The opening of the ranks of the A.E.U. to such workers in 1926 and their recruitment in large numbers after 1933 partly removed this obstacle and in 1936 the Executive Council, following a National Committee resolution, once again put forward a detailed claim for the grading of machines. Certain machines, for example, planers, millers, grinders, capstan, turret and combination lathes, were, it was suggested, to be paid the full rate for fitters and turners ; others, including vertical drillers and screwing machines, were to be rated at 90 per cent. of the turner's district rate ; and others, needing less skill, were to be paid at rates agreed upon by the Union and employers. Rates for new machines were to be agreed as necessary. The claim was strengthened by the association with it of the Transport and General Workers Union and the National Union of General and Municipal Workers, both of whom included semi-skilled engineers in their membership.

The suggestions were based on the principle already conceded in the case of the older trades—centre-lathe turners, fitters, patternmakers and smiths—that the machine or tools should carry a rate irrespective of the work performed. If a turner's skill or the lathe was not fully used on a particular job, that was the responsibility of the employers and was no reason for reducing the turner's rate. The unions claimed that this principle could and should be applied to all machines and operations in the industry and that given goodwill on the part of the employers the classification or grading of different machines was practicable.

The employers rejected these suggestions outright and claimed that the grading of machines was impossible. They adhered to what they termed " the three-fold criteria " ; that the rate paid to a worker should depend on the skill of the man required to do the job, on the machine operated, and on the nature of the work performed. The unions described it as " system of manipulation that has left things so that we do not understand what they are. The employers have tried to dignify that combination by calling it a principle."[7] Each of these criteria opened the way in the shops to endless argument and to time wasted in trying to decide the character of the skill, machine, and work for every single operation, and the unions could not accept them. While national negotiations had for the time being failed some progress was made in certain districts in defining machine rates. But these local agreements were not an effective substitute for national uniformity.

The Union and the Threat of War

By 1936 the growing importance of the engineering industry and the increase in the membership of the Union gave added weight to the counsel of the Union in the wider labour movement. The treatment by the Government of the unemployed at home and the spread of Fascism abroad, with its terrible consequences for the working class, had cemented the view that industrial and political action must necessarily go hand in hand. The National Committee of 1936 instructed the Executive Council to place on the agenda of the Labour Party Conference a resolution condemning the foreign policy of the government, coupled with a demand for more effective methods of combating Fascist aggression. At the same time, the Union urged the Labour Party to explore the possibilities of increasing the united action of the British working class. Its delegation at the 1936 Labour Party Conference supported the affiliation of the Communist Party, and Jack Little in a powerful speech to a resolution standing in the name of the Union, pointed to the rise of Fascism in Germany and the events in Spain and urged the Conference to instruct the National Executive Committee to meet representatives of all working-class bodies to bring about a " United Front." In 1939, the National Committee called " upon the whole membership to use all their influence in all their organisations to bring about the downfall of the National Government and the institution of a Labour-led People's Government, . . ."

In their support of the people of Spain the engineers were second to none. From the outset the vital character of the struggle was understood and the Executive Council attempted to secure the calling of a Conference of the whole British Labour movement to decide what action should be taken. The attempt was not successful but the Voluntary Aid Scheme of the Union, with a target of £50,000, to send lorries and assistance to the Spanish people, was widely supported by the members. Nor did action stop at collecting cards in the workshops. Vigorous protests against the non-intervention policy of the British Government came from most branches, and many members assisted in schemes to recondition and equip motor-cycle combinations as ambulances. On the Tyne over a period of eighteen months the engineers devoted their spare time, averaging four to six hours a week, to this object. In Glasgow, Edinburgh, Manchester, Swindon, Portsmouth and London similar work was done, and there were many individual members of the Union who joined the International

Brigade to fight alongside the Spanish people.

The Government's refusal to aid the Spanish people left bitter feelings in the ranks of the engineers and, when they were called upon to make sacrifices to assist the re-armament made necessary by the appeasement of the Axis powers, they made clear where they stood. Re-armament was opposed unless there was some assurance that the weapons produced were to be used for the purpose of defending democracy through some form of collective security. The Union pointed out that the sending of arms to Spain would do much to convince the engineers that the surrender of hard-won rights by dilution would be in the interests of democracy, and not in the interests of imperialist expansion. Pointing to the export of aircraft and machine guns to Japan, for example, the Executive Council declared:

> "Whatever we are prepared to do for our own nation, we are not going to yield up any of our privileges for the purpose of bolstering up other nations, particularly if those nations happen to be Fascist nations."[8]

By 1939 the engineers had regained the initiative they had lost in the battles of 1920–23 and in the world depression of 1930–33. Membership was rising rapidly. Many gains had been made in wages and working conditions. A comprehensive national programme, started by the Engineers' Charter was being developed and the close link between industrial action and political action had been widely accepted. At the same time, the gathering war clouds were plain to all. The engineers knew that if war broke out, it would place them in the forefront of the battle, and the keynote of the discussions in the summer of 1939 was a bracing for the impending storm, rather than consideration of long-term programmes for the future.

CHAPTER XI

The Engineers' War: 1939–1945

Few were surprised when on September 3rd, 1939, Britain found herself at war with Nazi Germany. The unchecked progress of Fascist aggression in the Far East, Abyssinia, Spain, Austria, Albania, and Czecho-Slovakia had made it merely a matter of time before Britain and every nation in the world was involved. But not until the lull of the first eight months was broken by the rapid march of the Nazi armies through Norway, the Low Countries and France, was it fully realised that the war would be a hard and desperate struggle, and that the outcome would depend not only on the fighting spirit of the armed forces and the morale of the civilian population, but on superiority in tanks, guns, aircraft and ships. The engineers became a key to defence and to victory. On them depended the fate of the country. If they faltered it would limp. If they were strong the country could stride forward.

The consistent tradition and accumulated experience of trade union organisation and discipline extending back for over a century enabled the engineers to take their full part in the war. The steady growth and achievement of the Union in the immediate pre-war years had provided a starting point; but success was neither automatic nor easy. The war was very different from that which the engineers had helped to fight in 1914 and different again from the struggles in which they had fought, with other weapons, in the years between the wars. Many of the old signposts of policy in the workshop and in the political and industrial life of the country had disappeared almost overnight. New ones had to be erected slowly and painfully. Instruction and training of women, discussions with employers on the quickest and most efficient way of doing a job, and support for a Conservative Prime Minister, were only three of the unchartered and unexplored paths to which the new signposts pointed. Were these policies right or wrong? What guarantees and evidence had the Union that it was not being led over the edge of a cliff? And if the policies were right, what steps should be taken to mould the Union to take advantage of the new situation? These were urgent and unavoidable questions. To postpone their consideration or to refuse to take action on their solutions would have weakened and maimed the entire working-class movement. " We need," said Jack Tanner, National President of the Union, nine months after the declaration of war, " to think deeply and clearly, free from narrowness and prejudice, and to act decisively in the interests of the Union, its members, and the whole working class. Our minds have to be adjusted and adapted to the violently changed conditions."[1]

The responsibilities of the engineers were threefold. In the first place, as the key section of the trade union and working-class movement, they had a responsibility to the nation. This was to ensure that their skill, energy and self-imposed discipline were not used in fighting a war to amass profits or territory, wasted by missed opportunities, or dissipated by inefficient management and organisation. It was their responsibility to see that their skill was used in a war for freedom and democracy, harnessed behind a government determined to win the war in the shortest possible time, and utilised in the workshops to produce in abundance the aircraft, tanks, guns and shells needed by the armed forces of the country and its Allies.

Secondly, the engineers had a responsibility to themselves and their families to see that there was real equality of sacrifice, that wages were a fair return for the work done under war-time conditions and that no advantage was taken of the concessions made by the skilled workers. Thirdly, they had the responsibility of seeing that their own organisation was capable of playing its full part in the life of the country and industry, and that the struggles in the war gave it added strength and ability to meet the future.

The Union and the Conduct of the War

Heavy unemployment in all industries in the inter-war years, the depressed state of the engineering trade, which only began to revive with preparations for the second world war and the growing menace of Fascism, had made increasing sections of the trade union movement aware that so-called " political " questions were not entirely divorced from " trade " questions and could not be left only to those who were elected to represent Labour in Parliament. This had led to the acceptance by the trade union movement of a wider conception of " political " action. The outbreak of war served to confirm the need for wider political action and to emphasise the fact that the price of liberty is eternal vigilance. While the A.E U. threw itself into the struggle for the complete annihilation of Fascism, it reserved its right to criticise and condemn any action taken by the Government which in its opinion was not calculated to help the fight, and to put forward suggestions for the better conduct of the war against the Axis powers.

In spite of the barrage of " leave it to the experts " and " unions should not meddle in strategy and politics " the engineers through shop and branch meetings, District and National Committees and the Executive Council, did not hesitate to raise their powerful voice against the faint-hearts and appeasers. Doubts as to the possibilities or need for a second front in Europe and hesitation in Britain's relations with the Soviet Union were met by resolutions for the speedy opening of the second front, for full aid to the Soviet Union and for a unified military strategy. Attempts considered likely to spread disunity among the Allies were thoroughly exposed. To an astonished Trade Union Congress in 1941, the Union's President revealed that :

> " There are people in high places who declare that they hope that the Russian and the German armies will exterminate each other, and that while this is taking place, we, the British Commonwealth of Nations, will so develop our Air Force and the other armed

> forces that if Russia and Germany do destroy each other, we shall be the dominant power in Europe. Now this point of view has been expressed quite recently by a Cabinet Minister, a member of the present Government, a gentleman who holds a very important position, none other than the Minister of Aircraft Production, Colonel Moore-Brabazon."[2]

That this policy remained a pipe-dream was in no little part due to the indignation and vigilance that followed this speech.

On home affairs the engineers were equally determined that the efforts of the nation should be based on democracy and equality of sacrifice. Continuous efforts were made to secure increases in pay for servicemen and their dependants and, with the important part that women were playing in industry, for the establishment of the principle of equal pay for equal work irrespective of sex. The ban on the publication of the *Daily Worker* brought an increasing volume of protest, the Union playing a leading part in securing its withdrawal, and there were few workers more indignant than the engineers when the news reached the workshops that Sir Oswald Mosley had been released from internment.

With bitter memories of the reckless boom and heavy and continuous depression that followed the Armistice in 1918, and with current evidence of the sacrifices being made by their members to win the war against Fascism, the Union took a particular interest in the plans and proposals for post-war Britain. "The continuance of Government control in regard to finance, raw materials and prices, and the safeguarding of labour conditions" was regarded by the National Committee in 1944 as the only means whereby a repetition of 1921–23 and 1930–33 could be avoided. Further they demanded that these controls, necessary to win the war against Fascism, should be used in a peace-time battle against dirt, squalor and disease by helping to secure full employment, adequate housing, insurance against sickness and old age, a national health service, and a higher standard of education.

To add weight to its war-time demands and to ensure that the Labour movement would be powerful enough to secure the further demands in the peace, the Union strengthened its links with the Labour Party and strove for increased unity of the whole working-class movement. The National Committee in 1943 drew attention to the small number of members of the Union who had contracted-in to pay the political levy to the Labour Party, and called upon the Executive Council to campaign throughout the Union to increase the number of members paying the levy and to "induce all branches of the Union to affiliate to the appropriate local Labour Party." At the end of 1943, the number of members paying the levy was nearly 136,000, almost double the pre-war figure, and the number of Parliamentary candidates of the Union could thus be increased to nine. But to the 1944 National Committee the position still remained unsatisfactory with only 11 per cent. of the membership lending their weight to the political struggle, and the campaign was intensified.

That strength comes from amalgamation and unity was a lesson which the engineers were not likely to forget, and the experience of the very democratic structure of the A.E.U. had made heresy-hunting appear unnecessary and even dangerous. For this reason, the engineers urged that in the wider labour and trade union movement the bans and barriers directed against sections of the working class who had not always seen eye to eye with the leaders, in particular the Communist Party, should be broken down. At the Trade Union Congress in 1942 their support for the withdrawal of Circular 16, which placed restrictions on delegates to trades councils, was an instance of this policy, and at the Labour Party Conference the following year the A.E.U. representatives voted in favour of the affiliation of the Communist Party. In 1944, with victory in the war assured, the Executive, in an attempt to strengthen the unity of the working class, went further and called on the Labour Party to convene a conference of all progressive political organisations to discuss electoral unity, so that victory in peace for the working people of the world could be adequately safeguarded.

Producing the Tools

By vigilance on the methods of fighting the war, by demands for a just and democratic policy at home and by their efforts to strengthen the labour movement, the engineers fulfilled part of their responsibility to the nation. But they did more than make pledges and pass resolutions. The main contribution which they could make towards victory lay in their own industry. Working long hours under blackout conditions, travelling in crowded buses and trains, perhaps living in a hostel or a billet and risking their lives to continue production during air-raids, trade unionists played a role second to none in salvaging the skill and equipment which had long been idle in dole queues and rusted in derelict shops and yards, and in training the new labour force and creating the capital equipment necessary to produce the tanks, ships, guns and aircraft essential to winning the war.

The first step taken by the A.E.U. to increase the production of war materials was to relax the safeguards regarding entry into the trade which had been laboriously built as a partial defence against unemployment and undercutting since the days of the early millwrights. A week before the outbreak of war the Union signed an agreement with the Employers' Federation for the Temporary Relaxation of Existing Customs, which was confirmed with the outbreak of war. Under this agreement the Union permitted the employers to use an alternative class of worker on jobs hitherto done by skilled men and to upgrade semi-skilled men, provided that a register of all such changes was kept and that when sufficient skilled labour became available once more there should be a restoration of previous practices. On May 22, 1940, the Extended Employment of Women Agreement was signed, " with special regard for increasing output and to meet war-time emergencies."[8] It allowed women to do work previously performed by boys and youths, and work done by men, provided that after serving a probationary period of eight weeks, during which they should receive the Women's National Schedule of time rate and bonus, they should receive a rising percentage of the rate of the men whom they replaced for a further twenty four weeks. At the end of this time they were entitled to receive the full rate for the job.

But the Union's contribution was not confined to passive concessions. The need for a more responsible and active attitude towards the problems of the engineering industry in war-time was well described by the President at the National Committee Meeting in 1943:

> " In the past," he said, " trade unions have mainly been protective and defensive organisations, and, in regard to many matters, quite negative. We must become more positive and constructive in our outlook and approach to the issues now confronting us and those that will arise in the future."

Any complacency which might have existed as to the state of the production machinery of the country was shattered by the disasters of Norway and Dunkirk, Greece and Crete. The totally insufficient number of aircraft, the outclassed tanks, the outranged guns and the paucity of automatic small-arms, which played a large part in the military defeats of 1940–41, put the spotlight on engineering, and underlined the criticisms which the Union had consistently levelled against the organisation of the industry and the " lack of a clear plan and co-ordination between Government Departments, industry and labour." The Union repudiated " any responsibility for delays and checks in production," and placed the blame on the Government for allowing " the reckless squandering of the nation's resources and energies." In the opinion of the Union President, the lack of efficient Governmental plan and control was responsible for " mismanagement, gross inefficiency and incompetency in industry."[4] Assured of Government contracts on a cost plus percentage basis, many firms were content with leisurely and wasteful methods of production.

The entry of the Soviet Union into the war in June, 1941, and the knowledge that Soviet workers were making outstanding contributions to the problems of increasing production stimulated British engineering workers to tackle in new ways the problems of their own industry. Throughout the ranks, the autumn of 1941 " marked the turning point from a period of cynical or angry passivity, bred of frustration, to one of action, characterised by efforts to break the bottle-necks and make a drive for increased production."[5]

In October, 1941, in order to direct the attention of members to the problems of production, to analyse in detail what was wrong and to enable constructive suggestions to be made, the Union undertook an enquiry into the state of munitions production throughout Britain. This enquiry directed by the Union's Research Department and based on reports straight from the workshop by shop stewards, branch officers and district committeemen, provided powerful ammunition. Facts were now available to supplement the general criticisms, and the full report was immediately made available to the Production Executive, so that any tendencies to complacency that might arise from relying too much on reports from Government officials and managers alone might be corrected.

The main suggestion put forward by the Union to the Government and the employers as a step to improving production and ending frustration and cynicism was that Joint Production Committees of management and workers should be established in every factory. To many employers such a suggestion seemed to go right to the heart of " managerial functions " and to threaten Clause I of the 1922 Agreement—" the employers have the right to manage their establishments." But the engineering unions were concerned more with production than with " rights," and the facts regarding wastage of man-power and materials through lack of co-operation, and the enthusiastic support among the engineers for Joint Production Committees proved strong enough to defeat the opposition. In many factories in the winter of 1941–42 the members, without waiting for a formal agreement, secured the setting up of Joint Production Committees. A second production enquiry undertaken by the Union early in 1942 revealed that these committees, where operating, had directly assisted production and that engineers as a result of these enquiries were taking a lively interest in the problems. In January, 1942, the Midland Regional Board of the Ministry of Production officially recommended the establishment of Joint Committees. In February the Ministry of Supply signed an agreement with the engineering unions for the setting up of Joint Production Consultative and Advisory Committees in Government-controlled establishments, and finally, on March 18, a similar agreement was signed with the Employers' Federation. In the following months Joint Committees to discuss production matters appeared in most federated firms and Government establishments, and a Third Production Enquiry taken six months after the March Agreement could report:

> " The workpeople have awoken to their responsibility for production. A concerted effort is now being made in all the most vital branches of engineering to draw the mass of the workers into this battle on the production front."[6]

By 1944 over 4,000 of these committees had been established, and to improve their effectiveness a network of District Trade Union Production Committees had been set up by the T.U.C., and Joint Production Committees in the factories had been given powers to refer matters to regional boards where necessary.

It is impossible to estimate fully the contribution which this machinery, and the general policy of the engineering unions made to improving the efficiency of munitions production; but there can be little doubt that the relatively few serious or prolonged strikes in the industry and the general improvement in relations between management and workpeople which was reported from all sides were largely due to the policy of the trade unionists. All engineering workers had reason to be proud of the part that their sacrifices and efforts played in producing the weapons that made D-Day and the Rhine crossings possible. The monthly output of munitions in the first six months of 1944 was estimated at six times as great as at the outbreak of war, and in just under five years the engineering and shipbuilding industries delivered to the armed forces over 100,000 aircraft, over 25,000 tanks, 92,000 wheeled vehicles, more than 3,500,000 machine and sub-machine guns, 2,000,000 rifles and 722 major vessels, as well as numerous other weapons and smaller ships.[7] The country no longer suffered through lack of arms.

The Defence and Improvement of Wages

The realisation that the engineers could not make their contribution to victory without sacrifices did not blind the Union to the responsibility which it held to its own members. Indeed, consistent defence of wage rates and of the rights of members under the various Government regulations, and efforts to improve working conditions in the factories were recognised as part and parcel of the measures necessary " to increase and sustain the industrial war effort."[8]

One of the chief concerns of the Union was to raise the basic rate of the engineering worker. Earnings in war-time, based on anything from five to fifteen hours overtime a week, effectively concealed the low basic rate for a 47-hour week, which compared unfavourably with the rates of workers in many other industries. At the outbreak of war, the average provincial rate with the national bonus for plain time-workers amounted to only £3 8s. 0d., a sum which fell short of the level reached in 1920 by over £1. It was with the aim of providing a minimum rate which would enable the engineer to purchase all the necessities of life that the Executive Council made successive applications for increases in wages. In February, 1940, the Employers' Federation conceded an all round increase of 5s. in response to the Union's claim for 10s., but to subsequent demands it returned an absolute refusal, claiming that it was not in the national interest to increase wages, using among others the specious argument of comparing the earnings of engineers with those of the armed forces. The Union refused to accept these arguments and referred their claims to the National Arbitration Tribunal, established under the Conditions of Employment and National Arbitration Order of 1940. Here the Union argued that the profits of the industry were such that they could well afford to raise the rates of all the workers in the industry. They pointed out that a rise of 4d. an hour would cost the nation less than 1 per cent. of the £13,000,000 a day being spent on the war, and this extra sum was necessary to enable the low-paid workers in the industry to be maintained " at the peak of efficiency." In January, 1941, the National Arbitration Tribunal gave an award of 3s. 6d. to all workers. In December of the same year, another 5s. was granted, and in March, 1943, time-workers obtained an additional 6s. on their national bonus and piece-workers were allowed to earn a minimum of 27½ per cent. above their basic rate, instead of 25 per cent. In May, 1944, an additional 4s. was granted, which for the first time brought the engineers' wage rate to a higher level than the rate of twenty four years before.

General wage increases were not the only preoccupation of the Union. The engineers sought to simplify the " most complicated and unsatisfactory wage structure in industry."• Until the award of March, 1943, every increase in wages had been added to the national bonus, and not to the basic rate. Award 326 in March, 1943, went a little way to meet the demand of the Union that the national bonus should be consolidated into the basic rate. This award transferred 20s. from the national bonus to the basic rate but the Tribunal perpetuated the double-barrelled structure by adding the 4s. award of May, 1944, to the national bonus. Nor did the attempt to substitute a national minimum rate for skilled men in place of the varying district rates—the heritage of the local negotiations of pre-1914 days—meet with any greater success. Both the employers and the Arbitration Tribunal refused to take any action in the matter.

Greater success was achieved in the efforts to increase the earnings of certain sections of skilled time-workers, who often found their money below that of the skilled or semi-skilled workers on piecework. The Toolroom Operatives Agreement of June, 1940, gave men in this key section of the industry the average earnings of skilled workers in the same firm—or in some cases the same district—engaged on piecework production. An agreement of January, 1942, provided that skilled maintenance men, inspectors and others, on the basis of a 47-hour week, were to earn not less than 8s. above the inclusive district rate for fitters.

Nor were the young workers forgotten. In July, 1940, the Union obtained the suspension of the Young Journeymen's or "Improvers' " Rate, which had imposed a waiting time of six months before the young workers on reaching the age of twenty one could claim the full district rate for his trade. In March, 1941, an important agreement was concluded in which the employers recognised the principle that young workers should be paid a definite percentage of the skilled fitter's rate according to age. Subsequent agreements in July, 1942, and April, 1943, included all ages from fourteen to twenty one in the schedule and gained appreciable advances in the percentage for those between the ages of eighteen and twenty one.

The thorniest problems with which the Union was faced were those of wage rates of semi-skilled grades and women workers, two questions which, with the large increase in the numbers employed in the industry and the technical changes and modifications of production of war-time, proved to be closely related. Under the Extended Employment of Women Agreement the Union had won recognition of the principle that women replacing men should receive the man's rate after a probationary period of thirty two weeks. In practice, however, it was found that the agreement was riddled with loopholes, and that employers could and did evade their obligations by interpreting in their own way two phrases of the agreement. Much of the time of the Union's officials, from shop stewards to National President, was occupied in disputes which arose from the loose interpretation put upon the terms " without additional assistance and supervision," by the employers. The latter also frequently claimed that work done by women for whom the Union claimed the man's rate was not subject to this clause of the agreement because it fell into the category of work " commonly performed by women in the industry."

But while a minority of women could claim the negotiated district rate because they were performing work previously done by fully skilled men, the majority were doing work of a less skilled nature for which no rate had been negotiated nationally but for which a rate above that of the labourers was generally negotiated in the district. It proved comparatively easy, therefore, for the employers to pay women only the appropriate rate under the National Schedule, which was below that of the male labourer, hitherto the lowest rate in the industry. Speaking at the first Annual Women's Conference in May, 1943, the President declared :

> " Frankly there is a bad history behind all this. The system which allows women to be brought into industry as ' cheap labour ' and uses them with the double object of exploiting them and undermining the men's rates, has left its scars on all of us."

A step towards recognising the existence of new work not hitherto performed by either men or women and therefore requiring a negotiated grade of rates was taken when the workers of Rolls Royce, Hillingdon, Scotland, succeeded in obtaining rates above the National Schedule for those women engaged on certain types of not fully skilled work. These increases were made as a result of a Court of Enquiry under Lord Wark following the threat of a strike. The Wark award was only a first step, with a limited application, and the campaign to prevent women being used as cheap labour and for the grading of jobs, irrespective of sex, continued. In 1944 the National Committee decided to tackle the problem along with a campaign to simplify the wages structure of the whole industry and passed the following resolution :

> " This National Committee is of the opinion that the time has arrived for the most serious and urgent consideration of the question of the whole wages position in the Engineering Industry and, in view of the developments which have taken place during the war period and the changed character of the industry contemplated in the post-war period, is convinced that a fresh approach must be made with a view to building up a new wages structure for the industry, embracing all grades, and which will relate the basic rates of the lowest grade worker to human needs. We therefore request the Executive Council to proceed with the formulation of proposals for such a new wages structure."

The same National Committee also endorsed a resolution of the second Annual Women's Conference which called for the " full operation of the Extended Employment of Women Agreements and for the labourers rate for the district to be the minimum starting rate for women." A path through the wage-rate maze was being cleared.

The Essential Work Order and Working Conditions

The Essential Work (General Provisions) Order of March, 1941, confronted the Union with further problems of safeguarding its members. While the Union concurred with the main provisions of the Order, since it recognised the need for the direction and control of labour, it attempted by interviews with the Minister of Labour and National Service, and through Parliament, to secure certain amendments which, while not detracting fom the purpose of the Order, would prevent it being abused. The sections to which the Union paid particular attention were those which allowed the employer to summarily dismiss a worker for " serious misconduct," the power of the National Service Officer to overrule decisions of the local Appeal Boards and the absence of powers to force employers to reinstate and pay back wages to those workers who had successfully appealed against dismissal.

It was, however, on a local scale that the value of trade unionism to the workers in relation to this Order was perhaps most clearly demonstrated. The complicated procedure of form filling, visits to the Labour Exchange and appearances before the National Service Officer and Appeal Boards, which had to be embarked upon whenever a worker wished to change his job, or remain in his old one when his employer wished to dismiss him, called for expert advice which shop stewards and branch officers, supplemented by district officials, were able to supply. The few cases of unjust decisions by National Service Officers and Appeal Boards received much publicity ; but the list of cases where injustice was prevented by the timely intervention of Union officials would have made much longer reading. The Union had branched out into unaccustomed spheres and had acquitted itself creditably.

The unavoidable strain of war conditions caused the Union to place ever greater emphasis on the provision of good working and living conditions for engineering workers. Throughout the war continuous pressure was maintained by the Union nationally, and through its local officials and members in the workshops, for the provision of good canteens, for better lighting and ventilation in the blacked-out factories, for every safety precaution against accidents, particularly for the new, inexperienced workers, for easy and quick transport to and from the factories with priority for war workers, for good billeting arrangements and hostels for transferred workers, and for mass radiography to detect and deal with tuberculosis in its early stages.

Special attention was paid in the later years of the war to the special needs of women workers. Demands were put forward for the provision of women welfare officers in every firm employing a large number of women, for nurseries where married women could leave their children, for adequate shopping-time to enable them to run their homes efficiently, for suitable part-time work and pay for those with home responsibilities, and for leave with pay before and after the birth of a child.

In order to obtain the fullest information on these problems of the health of the workers in engineering, and in order to stimulate the members to study the problems, the Union again used the enquiry method. In 1944 shop stewards in every factory were asked to give details of the conditions under which the engineers worked and lived, and to make proposals for improvement. The response, which included replies from stewards of thirty six other unions and in all covered over 2,250,000 workers, demonstrated the interest in the problems and the value of calling upon the workers themselves to prepare the ground upon which a national policy could be based.

The channels of negotiation to secure these improvements in wages and working conditions remained in essence the same as those existing in pre-war days. The chief difference was that the unions had foregone their right to call a strike, and instead the National Arbitration Tribunal was set up, to which either side could refer claims in the event of failure to agree in the normal negotiating machinery.

Other changes in negotiation were changes of emphasis. With the increase in the membership of the Union and in the number of problems, greater responsibility fell on the shoulders of the workshop representatives and district officials. A large increase in the number of Works and Local Conferences took place. In some industries where engineers were employed, such as flour milling and Imperial Chemical Industries, the special negotiating machinery set up before the war continued to operate and with the growth in the numbers directly employed by the Government in dockyards, filling and ordnance factories the Joint Industrial Councils for the various departments increased in importance. The Union was represented on each of these and, in addition, on the Engineering Trade Joint Council, the Shipbuilding Trades Joint Council and Joint Co-ordinating Committee, which dealt with wages in Government establishments. To assist negotiations, Advisory and Co-ordinating Committees covering the different Government Departments were established.

The Challenge to the Union's Organisation

The great expansion of the engineering industry during the war, and the widening scope of the Union's activities presented it with a challenge. Was its structure and organisation capable of meeting its responsibilities to the country and to the engineering workers ? Could it play its part in the affairs of the nation, and of the industry, and at the same time safeguard the standards established over long years of struggle ? Could it in fact prove to the nation as a whole, and to all the workers in the engineering industry in particular, the value of trade unionism ? The answers to these questions rested largely on whether the A.E.U. could transform itself into an industrial union catering for the needs of every section of workers; whether it could act as a united force, in which there was the fullest confidence between leadership and rank and file, and whether the entire membership could be made participants in decisions and activities. Success in its tasks also rested on the relationships which it built up with other unions catering for sections of engineering workers.

The war years saw both the blossoming of the Union into an industrial union, in which pride of craft was used to benefit all workers, and a tremendous recruitment to its ranks from every grade of worker in the industry. Recruitment to Sections V and Va, which catered for semi-skilled male workers and those skilled men who wished to qualify only for the industrial benefits of the Union, was speeded up as a result of the war. Between September, 1939, and January, 1945, the total membership in these sections increased from 145,577 to 335,224. A new section for members entering the industry under the Temporary Relaxation Agreement, Section V, T.R.A., was set up, which enabled members of other unions outside the engineering industry to join the A.E.U. while retaining membership in their own union, and by January, 1945, membership of this section was 40,920. Great efforts were also made to increase the number of junior male workers in the Union. The Rules Revision meeting of 1940 established a new Section —IVa—for youths, and, together with Section IV, which still proved the most popular, the youth membership by January, 1945, totalled 111,393, an increase of 64,535 over the figures of September, 1939.

But while women remained outside the ranks the Union could not claim to represent the engineers as a whole. The decision to admit women, taken by a special meeting of the Rules Revision Committee in 1942, following a decisive vote by the members on the question, was the culminating and logical step in the process of widening the basis and structure of the Union begun a century ago, and of making it into an industrial union.

Until January, 1943, the date on which women were first admitted into the A.E.U., the Transport and General Workers Union and the National Union of General and Municipal Workers had been mainly responsible for organising the women in the industry, a task in which they had been assisted by male shop stewards of the A.E.U. With the opening of the doors to women, the Union stood " in danger of causing a certain amount of inter-union rivalry and strife, the effect of which could only have been to weaken the movement of the organised working class as a whole instead of strengthening it as this step was intended to do."[10] However, the very considerable recruitment of women to the A.E.U. in 1943—a total of 138,717, averaging 9,200 a month—was conclusive proof of the necessity for this step, and a workable agreement regarding recruitment of women, between the A.E.U., the T.G.W.U., the N.U.G.M.W. and the Iron and Steel Trades Confederation in July, 1943, pledging the four unions to "assist each other in getting 100 per cent. organisation," brought co-operation rather than competition for members.

A total membership of all sections numbering over 900,000 in 1944 presented problems of organisation and democracy far different from those of the more compact membership, a third of the size, in pre-war days. Officials at headquarters and in the districts, the National Committee and the active members in the shops were all aware that, if the influence and prestige of the Union were to be as widespread as its membership, ways and means had to be devised to draw into the life and decisions of the Union a large percentage of the vast membership.

It was seen that, in building and strengthening the Union, shop stewards occupied a key position. Successive National Committee Meetings instructed the Executive to set the target of a shop steward in every section and department of every engineering factory throughout the country. Apart from his function as representative of the men or women in negotiations with the management, the steward found his duties greatly extended. It was he who became the chief figure in the aim to recruit all the workers in his shop or department; to see that they attended their branch meetings and kept up to date in payment of their dues. It was he who had to demonstrate the value of trade unionism to the workers, through his willingness and ability to deal with the varied problems of the members at home and at work. The prodigious growth in membership and influence of the A.E.U. was by no means an automatic process. It rested largely on the painstaking work and feats of organisation performed by stewards up and down the country, who gave up much of their limited spare time and energy, and frequently sacrificed their earnings to devote their attention to improving the conditions of their workmates. A rhyme reprinted in the *Monthly Journal* in 1943 vividly sums up the trials and tribulations of the war-time steward.

Who is this Man?

Who is the worst paid man to-day ?
With haggard look and hair turned grey,
Who's blamed when things do not go right
Who gets no rest by day or night ?
Though never having been to college
He must possess the widest knowledge
On rates of pay and hours of labour
And how to keep peace with one's neighbour.
Of income tax and how to pay it,
What's best to say, and when to say it,
The how and which and why and when
Of all the problems known to men
If with the foreman he's agreed,
He's sold the men or been weak-kneed.
When for the men he tries to cater,
He's called a blinking agitator.
Who is this chap ? What ! Don't you know him ?
Or how much you really owe him ?
This chap, whose torment is assured,
Is no one else than your SHOP STEWARD !

The problem of retaining the vast membership and making them active partners was by no means a simple one. The A.E.U. felt that it would be mistaken to adopt the method of money stewards, used by many unions both inside and outside engineering, as it would tend to stifle the development of branch life and activity, and to divorce the leadership from the mass of the membership. But it was not easy to persuade workers to attend their branch meetings regularly, and take part in the discussion and decisions after long hours of exacting work. In some branches, strenuous efforts were made by the officials to enliven the meetings, to eliminate dull routine matters and to promote social activities in order to interest and draw together the membership of the branch. But in many the overworked officials found the problem almost insuperable. Newer branches created for the increasing number of recruits tended to confine their membership to the workers from one or two factories, and to arrange their meeting times to fit in with the hours worked at these factories. The advantage of such organisation was felt to be that discussion at the branch meeting could directly relate the Union's policy to conditions in the specific factory, and thus evoke a keener interest. On the other hand it was thought by some that the advantage of interchange of opinion and news between members working in different factories would be lost by this method.

The shop steward was not the only official who felt the strain imposed by war-time regulations and conditions and the large recruit- to the Union. The number of stewards could be and was increased, but the number of branch officers, district committeemen, and full-time district and national officials was much less flexible. The increase in the number of Divisional Organisers from the twenty to which they had been reduced with falling membership in 1930 to twenty six in 1941, the increase in the number of full-time District Secretaries from seven in 1939 to ten in January, 1945, and the election of seven Regional Officers in each of the executive divisions in 1943 helped the A.E.U. to live up to its reputation for efficiency. But the main burden was carried by doubling the tasks of the existing officials.

An important feature of the latter years of the war were the special national conferences called by the Executive Council of delegates from the District Committees together with the full-time officials of the Union. The purpose of these conferences was to bring the Executive into closer touch with the districts, and to hear their opinion on vital questions of policy. The first such conference, held in November, 1943, discussed the Union's general policy, and in particular the dissatisfaction which existed with the National Arbitration Award 326. At the Conference, the Executive explained its action in suspending the Barrow District Committee which had led an unofficial strike against the terms of the award, as well as the Huddersfield District Committee which had supported the Barrow Committee in its attitude. A similar conference held in February, 1945, was mainly concerned with the question of redundancy and of full employment in the last stages of the war.

But of even greater importance was the machinery set up to discuss the particular problems of certain sections of the membership. In May, 1943, five months after the admission of women into the Union, the first Annual Conference of women delegates was held at Southport. Twenty six women shop stewards, who were members of District Committees, attended. This successful Conference showed the determination of the women to see that their presence in the industry was not used to lower the standards established over long years of struggle by the men, and it proved to the doubters that the admission of women had brought added strength. Five of the delegates were elected to attend the National Committee meeting in the following June, and the resolutions adopted by the Conference were passed to the National Committee for consideration and endorsement. In 1944, delegates attending the second Annual Conference were elected from the Divisions, and seven of their number attended the National Committee.

While successive National Committees had devoted much time to the specific problems of young workers, such as their wages, hours and training, it was realised that the best method of improving conditions for youth in the industry was to draw them into much more active participation in the Union In 1940, the Executive had urged the setting up of junior male workers' committees in the districts, but it was not until 1942, when a model constitution for such committees was prepared, that these committees began to exercise any influence. One of the first jobs of the Regional Officers appointed in 1943 had been to strengthen this aspect of Union activity, and by 1944, when young girls in the industry were included in the constitution of these committees, the junior workers' committees in many districts became live, functioning bodies. In July, 1944 the first national Youth Conference was held, at which apprentices discussed their problems and formulated a six-point charter for consideration by the Executive. The keynote of the conference was set by the National President when he declared :

> "We are deeply concerned that the exploitation of youth labour—whether disguised as apprenticeship or not—shall cease."

The resolutions and discussion showed that the Union as a whole, and the youth section in particular, had no illusions as to the cause of the decay of apprenticeship in the industry in the years between the wars, and that they were willing to accept their responsibility for improving the training and conditions of the young engineering workers in preparation for the future

Parallel with these developments in the internal organisation of the Union came the efforts to improve its relations with other unions catering for engineering workers. In 1939 agreement was reached with the National Union of Foundry Workers to present joint claims to the Engineering Employers' Federation, and in May, 1942, the National Engineering Joint Trades Movement was re-established, consisting of representatives of the Foundry Workers, the Confederation of Shipbuilding and Engineering Unions and the A.E.U. During 1944 efforts were made to find an agreed basis on which the A.E.U., which numbered more than all the other engineering unions put together, could affiliate to the Confederation.

1943 saw a renewal of the efforts made by the A.E U. to secure amalgamation with some of the other engineering unions. An exploratory conference, called by the A.E.U. in Manchester in November, 1943, at which seventeen unions were represented, was followed by further conferences at which most of these unions discussed the best possible basis for amalgamation. To further the objective, the National Committee in 1944 called on all District Committees " to try and form 'amalgamation committees' in their districts with a view to obtaining the interest of the rank-and-file membership of the various unions." The A.E.U. had gained its strength through a series of amalgamations, and in the words of the editor of the *Monthly Journal* in January, 1943 :

> " It does not seem to us to be beyond the capacity of trade union statesmanship to reduce these large groups of unions very considerably by amalgamation."

The first fruits of these efforts was the admission of the Amalgamated Society of Glass Works' Engineers in 1944 and of the Amalgamated Society of Vehicle Builders, Carpenters and Mechanics on July 1, 1945.

Victory and the Future

In midsummer, 1945, the engineers could with justification take part in the celebrations of the Victory over Nazi Germany and Japan. The Union had lived up to the responsibilities that an engineers' war had placed upon it. It had shown itself capable of making sacrifices in the national interest ; it had demonstrated its willingness to adapt its organisation and outlook to the needs of total war ; it had defended and improved the wages and working conditions of its members. With these achievements the Union had grown in numbers and in stature ; but success had not been automatic. In the words of the President :

> ". . . had we been more conservative and hesitant . . in our approach to the events of our time, we should have failed to take the tide which has borne us to such a high place in the industry and the country."

The members had matched their belief in the traditions of the Union and their courage in struggles in the past with an equal courage and readiness to develop new policies and erect new signposts where old ones were shown to be out of date.

The Union also celebrated in midsummer, 1945, the 25th Anniversary of its foundation. Some members could look back with memories of the bitter campaigns and few successes, of unemployment and short-time, and of the rush for engineers when Britain was in danger. Others knew the Union only in war-time, the shop steward in the workshop, Joint Production Committee meetings, negotiations on piece-work prices and the constant advice and assistance from Union officials. But all members, old and new, men and women, knew something of the traditions of the Union, knew its strength and could look to the future. The problems of the future were many. Immediate problems of redundancy and re-conversion to peace-time production ; longer-term problems of the effect of the technical developments of war-time on the wages structure and character of national and workshop negotiations in the industry ; problems of the great size and composition of the Union, the declining proportion of apprenticeship-skilled men and the recruitment of women, the problems of small branch attendances and signs of unwieldy organisational methods. These and many similar problems confronted the National Committee and Rules Revision

Committee when they met in London at the time of the Anniversary. This National Committee had a particularly heavy responsibility to fulfill; but it was not theirs alone. The history of the Union shows that Delegate Meetings, National Committees and Rules Revisions can only guide the developments and policy of the Union , it is the members who make the policy. And the answer to a question "Is 1945 a peak in the story of the engineers or is it the start of a greater expansion ?" will be found in the workshops and branch meetings of the Union throughout the country.

NOTES

PART ONE

CHAPTER I

1.—*Book of Genesis* (Revised Version), Ch IV, v 22.

2.—W. Fairbairn, *Treatise on Mills and Millwork*, 4th edition, 1878. Preface to 1st edition, 1861.

3 —Cf S & B Webb, *History of Trade Unionism*, 1920 edition, p 50, ff.

4 —*House of Commons Journal*, April 5, 1799 Quoted in J L. Hammond's *The Town Labourer*, 1937 edition, pp 131 2

5 —*The Times*, December 13, 1810 Quoted in R W Postgate's *The Builders History*, 1923, p 16

6 —*The Life of Sir William Fairbairn, Bart*, edited by W Pole, 1877, p 92

7 —*First Report from the Select Committee on Artisans and Machinery*, 1824 Evidence of A Galloway, T Bramah, pp 28 and 40

8 —*Ibid*, Evidence of Maudslay, Bramah and Donkin, p 38

9 —Everard Hesketh, *J & E Hall, Ltd*, *1758-1935*, 1936, p 8

10 —The point that changes in the tools led to the diminution of importance of the millwrights' organisations, is also made by W McLaine, *The Early Trade Union Organisation Among Engineering Workers* (Unpublished Ph D thesis, 1939, University of London) p 92, and by S & B Webb, *op cit*, p 205

11 —Robertson Buchanan, *Practical Essays on Millwork and Other Machinery*, 3rd edition, edited by George Rennie, 1840 Appendix B by James Nasmyth pp 394-5

12 —J Nasmyth, *An Autobiography*, edited by S Smiles, 1883, p 140

13 —Robertson Buchanan, *op cit*, Appendix B, p 403.

14 —*Transactions of the Manchester Association of Engineers*, 1905. Paper by Thomas Ashbury, p 72

15 —W Pole, *op cit*, p 112

16 —J Nasmyth, *op cit*, p 200

17 —Edwin Kitson Clark, *Kitson's of Leeds, 1837-1937*, 1937, pp. 15-16

18 —*Report of the Select Committee on the Laws affecting the Export of Machinery*, 1841, Evidence of a textile-machinery maker

19 —*Proceedings of the Institute of Civil Engineers*, 1848, address by President, Joshua Field, p 36

20.—*Select Committee on the Export of Machinery*, 1841 Qu 1314

21 —*Select Committee on Artisans and Machinery*, 1824, pp 27-8

22 —*Select Committee on the Export of Machinery*, 1841, Qu 1319

23 —J Nasmyth, *op cit*, pp 200, 309

24 —*Report of the Select Committee on Laws Relating to the Export of Tools and Machinery*, 1825, p 20

25 —W McLaine, *op cit*, p 135 suggests that the Manchester Friendly Union of Mechanics may have been formed from a branch of the United Steam Engine Makers' Society which was formed in Bradford in 1822 and established branches in Lancashire but apparently failed There is some evidence of an earlier Society in Manchester, of which the Friendly Union was a direct successor, from the Account Book of the Manchester No 1 branch of the Friendly Union of Mechanics This book starts in April, 1824 and 592 names are listed as paying subscriptions, and references are made to branches in Leeds, Bolton, Salford and other Lancashire towns. A gap in the accounts then occurs, before the names of the members of the Friendly Union of Mechanics are listed in 1828

26 —Societies of the engineers in Yorkshire and Lancashire played a small part in Doherty's National Association and contributed to the funds Cf G D H Cole, A Study in British Trade Union History, 1829-1834, *International Review for Social History*, 1939

27 —This point is also made by W. McLaine, *op. cit* and examples are given of identical wording of rules

28.—Cf. *Select Committee on Artisans and Machinery,* 1824 and 1825, Evidence of employers.
29.—*Monthly Report,* A.S.E., February, 1903 and May, 1915.
30.—*North British Review,* October, 1870, article by Professor L. Brentano, The Growth of a Trades Union. Also S. and B. Webb, *op. cit.*, p. 220.
31.—Cf. *Plebs,* July, 1922, article by F. Shaw, A Page from Trade Union History.
32.—L. Brentano, *loc. cit.*
33.—F. Shaw, *loc. cit.*
34.—*Economic Journal, Economic History Series,* January, 1929 and January, 1930, articles by Professor G. W. Daniels on The Bolton Turnout.
35.—*Ibid.*
36.—*Select Committee on the Export of Machinery,* 1841. Evidence of Lancashire textile-machine makers. Qu. 1314 and 1428.
37.—L. Brentano, *loc. cit.* and Minutes of the Manchester No. 1 branch of the Journeymen Steam Engine and Machine Makers' and Millwrights' Friendly Society, 1841-1848. During most of these years this branch was the "acting" branch.
38.—Minutes of Manchester No. 1 Branch.
39.—Minutes of Delegate Meeting, 1845.
40.—Minutes of Manchester No. 1 branch, September 6, 1842.
41.—*Ibid.* December 18, 1843.
42.—Minutes of Delegate Meeting, 1845.
43.—Minutes of Manchester No. 1 branch, January 29, 1843, and L. Brentano, *loc. cit.*
44.—*The Claims of Labour : A Course of Lectures,* 1886. Lecture by John Burnett, General Secretary, A.S.E., p. 20.
45.—Minutes of Manchester No. 1 branch, July 17, 1845.
46.—*Select Committee on Artisans and Machinery,* 1824, Evidence of Henry Maudslay, p. 39.
47.—*Northern Star,* May 3, 1845.
48.—*Ibid.*, December 28, 1844.
49.—*The Operative,* January 4, 1851.
50 —*Monthly Report,* January, 1904. It is suggested by the Webbs, W. McLaine, and in the *Jubilee Souvenir* of the A.S.E. that the biggest struggle against the quittance paper took place in Bolton in 1844. It would appear from available evidence that it was Bury rather than Bolton that was the scene of the biggest struggle, and in Bury the men were led by Rowlinson.
51.—*The Operative,* January 4, 1851.
52.—*Northern Star,* December 26, 1846.
53.—*Rule Book,* 1847, and Brentano, *loc. cit.*
54.—*Northern Star,* December 26, 1846.
55.—*Jubilee Souvenir,* A.S.E., 1901, pp. 17-18.
56.—Minutes of the Executive Council, January 9, 1851.
57.—Trade Report of Journeymen Steam Engine and Machine Makers' and Millwrights' Friendly Society, February, 1851, quoted in *Monthly Report,* A.S.E., March, 1851.
58.—*The Operative,* January 11, 1851.
59.—L. Brentano, *loc. cit.*
60.—*Jubilee Souvenir,* p. 33.

CHAPTER II

1.—*The Operative,* July 26, 1851.
2.—*Monthly Report,* October, 1851.
3.—*The Operative,* April 12, 1851.
4.—*Select Committee on Councils of Conciliation,* 1856. Evidence of W. Newton.
5.—*The Operative,* April 12, 1851.
6.—Cf. Minutes of 1845 Delegate Meeting and L. Brentano, *loc. cit.*
7.—*The Operative,* March 1, 1851.

8.—*Ibid*, January 4, 1851.
9.—Some districts were very enthusiastic. The Central Committee of the Iron Trades of Bury had formed the Bury General Labour Redemption Society in 1850 with the object of subscribing 1d. per week, so that in 50 years, through similar societies throughout the country, the workers would be able to "buy up all the property in the Kingdom." The Bury branch supported the Windsor Foundry scheme vigorously.
10.—*The Operative*, October 25, 1851.
11.—*The Operative*, May 17, 1851.
12.—*Jubilee Souvenir*, A.S.E., 1901.
13.—*The Operative*, November 29, 1851.
14.—*Select Committee on Councils of Conciliation*, 1856.
15.—W. Pole, *op. cit.*, p 323.
16.—Sidney Smith, Statement for the Employers, *The Times*, January 17, 1852.
17.—Thomas Hughes, M.P., *Account of the Lock-out of Engineers, 1852*, 1860, resolution quoted p. 14.
18.—W. Pole, *op. cit*, p. 325.
19.—*The Operative*, January 4, 1852.
20.—*Ibid*, March 22, 1852
21.—*Half-Yearly Report*, June, 1852.
22.—William Newton's description in *The Operative*, January 17, 1852.
23.—*Royal Commission on Labour Laws*, 1875. Evidence of Sidney Smith.
24.—*Select Committee on Councils of Conciliation*, 1856. Evidence of William Newton.
25.—*The Operative*, January 24, 1852.
26.—Employers' Statement, *The Times*, January 17, 1852.
27.—*The Operative*, January 30, 1852.
28.—Executive Council Minutes, April 4, 1852.
29.—*The Operative*, April 17, 1852.
30.—*Select Committee on Councils of Conciliation*, 1856. Evidence of Sidney Smith.
31.—*The Operative*, May 8, 1852.
32.—*Select Committee on Councils of Conciliation*, 1856. Evidence of Sidney Smith.
33.—Letter from the Executive Council in *The Operative*, April 17, 1852.
34.—Editorial, *The Operative*, April 12, 1852.
35.—*The Operative*, April 17, 1852.
36.—Cf. *Journal of Association*, organ of the Christian Socialists, February, 1852, and also pamphlet issued by E. Vansittart Neale, *May I not do what I will with my own!* 1852.
37.—*The Operative*, May 8, 1852.
38.—C. E. Raven, *Christian Socialism, 1848-1854*, 1920, p. 251 ff.
39.—*Monthly Report*, March, 1856.
40.—Minutes of Leeds Delegate Meeting, quoted by Professor Brentano, *loc. cit.*
41.—*The Operative*, April 26, 1852.
42.—Quoted by B. Jones, *Co-operative Production*, 1894, p. 134.
43.—E. Jones, *Notes to the People*. Vol. II, p. 829.
44.—*Royal Commission on Trade Unions*, 1867-8. Qu. 19,008.
45.—*Ibid*. Qu. 19066.
46.—*The Operative*, December 6, 1851.
47.—*Select Committee on Councils of Conciliation*, 1856. Evidence of Sidney Smith.
48.—Executive Council Minutes, May 28, 1860.
49.—*Abstract Report of the Council's Proceedings*. July, 1876.
50.—Address to Electors and Non-Electors of Tower Hamlets, *The Operative*, April 12, 1852.
51.—*The Beehive*, August 22, 1868.
52.—*East London Observer*, November 21, 1868.
53.—*Abstract Report of the Council's Proceedings*, July, 1876.

PART TWO

INTRODUCTION

1.—*Population Census*, 1841, p. 20.
2.—J. Rankine published his work *The Steam Engine and the Prime Mover* in 1859.
3.—L. Dudley Stamp and Stanley H. Beaver, *The British Isles*, 1933, pp. 382-3.
4.—*Proceedings of the Institution of Mechanical Engineers*, August, 1874.
5.—T. H. Burnham and G. O. Hoskins, *Iron and Steel in Britain 1870-1930*, 1943, p. 65.
6.—*Proceedings of the Institution of Mechanical Engineers*, 1935. Vol. 131. Paper by G E Wolstenholme
7.—*Proceedings of the Institution of Civil Engineers*, 1887-8. President's address comparing planers in George Stephenson's works, 1837-1887.
8.—*Royal Commission on Trade Unions*. 1867. Evidence of William Allan. Qu. 734
9.—*Proceedings of the Institution of Civil Engineers*, January, 1877, Paper on Machine Tools
10.—From an Indenture dated July 27, 1872 in the library of the Institution of Mechanical Engineers.
11.—From an Indenture signed by Woodhouse and Rawson, Electrical Engineers, City of London and Arthur Williams and his father George Williams. Circa 1880
12.—*Monthly Report*, November, 1884.
13.—Table compiled from figures given in *Annual Reports*, 1865-1890
14.—*The Operative*, August 2, 1851.
15.—*Abstract Report of the Council's Proceedings* 1884-7.
16.—*Board of Trade Returns of Standard Rates of Wages* for a full week's work (exclusive of overtime), compiled from returns furnished by the Trade Unions. 1907.
17.—A. L. Bowley. *Wages in the United Kingdom in the Nineteenth Century*. 1900, p. 121.
18.—Letter to *The Times*, January 15, 1876, by John Burnett, quoted in *Abstract Report of the Council's Proceedings*. 1876.
19.—Executive Council Minutes, October 21, 1860.
20.—John Burnett, *loc cit.*
21.—Executive Council Minutes. *loc. cit.*
22.—*Report of Enquiry by the Board of Trade into Hours and Earnings*, 1886. C 6889. 1893/4.
23.—*The Operative*, January 4, 1851.
24.—*Abstract Report of the Council's Proceedings* 1879.
25.—A. Williams. *Life in a Railway Factory*. 1915, pp 32-3. The description refers to conditions about fifteen years before the publication date.
26.—*Annual Report*, 1880.
27.—*Select Committee on Councils of Conciliation*, 1856. Evidence of William Newton.
28.—*Abstract Report of the Council's Proceedings*, 1884-7.
29.—Figures calculated from *Annual Reports*, from 1851 to 1890.

CHAPTER III

1.—Executive Council Minutes, April 17, 1854.
2.—*Select Committee on Councils of Conciliation*, 1856. Evidence of William Newton.
3.—*Royal Commission on Trade Unions*, 1867. Evidence of William Allan, Qu. 681.
4.—*Ibid.* Evidence of John Robinson, Atlas Works, Manchester. Qu. 18980.
5.—*Select Committee on Councils of Conciliation*. 1856. Evidence of W. Newton.

6.—*Annual Report,* 1855.
7.—*Annual Report,* 1861.
8.—*Annual Report,* 1863.
9.—Executive Council Minutes, November 6, 1853.
10.—Executive Council Minutes, November 19, 1863.
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